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INGUINAL HERNIOTOMY WITH LOCAL ANAESTHESIA AND WIRE REPAIR

S. V. HUMPHRIES, M.A., M.R.C.S., L.R.C.P., *Lilongwe African Hospital, Lilongwe, Nyasaland*

The following is a description of the method used for more than 150 inguinal herniotomies performed in the Transvaal, Sierra Leone, Ghana, Central Australia, the Central Pacific and Nyasaland, between 1948 and 1960. Most of the patients were Africans, but the series includes many Pacific Islanders and White and Asiatic patients. About one-third of the hernias treated were very large, and about half of these were irreducible by taxis. Twelve were strangulated, and resection of gut was necessary in 2. Local anaesthesia alone was used for all but 1 (to be described below). There were no deaths in the series.

Local anaesthesia is advocated for all inguinal hernias, except those in which resection of gut is necessary, for the following reasons: The incidence of postoperative chest complications is reduced; unlimited time is allowed for careful dissection and repair (the anaesthetic can be renewed as often as necessary); the technique of administration of local anaesthesia for hernia is comparatively easy compared with that in other operations possible under local anaesthesia, while the anaesthesia provided is effective; and the patient can facilitate identification of the sac by coughing when directed to do so.

Repair with stainless steel wire is recommended because, however wasted the muscle layers may be in the area affected and however large the hernia, the gap can be bridged from healthy muscle above to Poupart's ligament below by a sturdy wire 'fence' through which the danger of penetration is slight. This is of particular importance in sliding hernias which have no peritoneal sac to prevent their future descent. I have known none of the hernias to recur. Though this may not be significant, as some of the patients may have required subsequent operations by other surgeons, it does at least suggest that recurrence after wire repair is exceptional. Efforts have been made to keep in touch with the hospitals at which the patients were treated, especially in attempting to follow up those operated upon for very large hernias.

ANAESTHESIA AND OPERATIVE TECHNIQUE

Requirements

A 10 ml. syringe and long narrow needles, 8 - 10 cm. × 0·8 mm. The local anaesthetic used may be procaine 1%, lignocaine 0·25 - 0·5%, or any other solution of equivalent strength. If the anaesthetic does not already contain a vasoconstrictor, 0·5 ml. of adrenalin is added to 200 ml. of solution. Standard gauge 33 - 34 stainless steel wire is recommended, but any gauge near this is satisfactory. Two assistants are a great help while working with wire, as both hands must be used to hold the wire and stop it from getting kinked (assistants are apt to disapprove of wire!).

Premedication

An enema is given the previous night, and water only may be taken by mouth on the morning before the operation. Three gr. of phenobarbitone or an equivalent dose of another barbiturate are given orally 2 hours before the operation, and 1½ gr. phenobarbitone, with ⅓ gr. omnopon and $^1/_{150}$ gr. scopolamine or 100 mg. pethidine, 1 hour before the operation. The object of giving a barbiturate is to neutralize the convulsive effect of local anaesthetics. Sedation is advisable, for, although the operation under local anaesthesia is almost completely painless, the infiltration of local anaesthetic through tough skin, with a needle which sometimes proves unexpectedly blunt, requires so much pressure that it is apt to alarm any but the most stoical of patients.

Technique of Local Anaesthesia

Wheals are raised with a fine hypodermic needle at 3 points: (1) 1 finger-breadth medial to the anterior superior iliac spine; (2) over the external abdominal ring; and (3) over the fossa ovalis. These 3 wheals are joined by subcutaneous infiltration, injecting about 30 ml. of solution.

From point (1) the needle is directed: subcutaneously, almost to the umbilicus, injecting 10 ml. in this plane; beneath the external oblique, also injecting 10 ml.; and beneath the internal oblique, also 10 ml.

The needle is then directed from point (1) directly backwards down to bone, injecting 10 ml. as the needle moves, then laterally to the anterior superior iliac spine, where 5 ml. are deposited.

From point (2) the scrotum and tunica vaginalis are infiltrated with 10 - 20 ml., and the inguinal canal with 20 ml. or more. Further injections can be given if necessary during the operation on large hernias, especially round the neck of the sac. Procaine hydrochloride 1% usually lasts barely 1 hour, lignocaine (0·25 - 0·5%) 2 hours, amethocaine hydrochloride (0·05 - 0·1%) and cinchocaine hydrochloride (0·05 - 0·1%) 3 hours. The weaker strengths mentioned are usually sufficient. When using lignocaine one can as a rule proceed at once with the operation; with the others it is necessary to wait 5 - 10 minutes.

This wide infiltration may not be necessary for small hernias, but I use it as a routine, for if the abdominal musculature is poor one can dissect the superficial structures extensively until sound muscle is reached. Gentleness should be observed when freeing the sac at the internal ring as pain may be felt if traction is applied to the peritoneum. There may be momentary pain when the neck of the sac is ligatured, and the patient should be warned about it if he is not asleep, and reassured that it will not persist.

Technique of Wire Repair

After removing the sac and isolating the cord, the conjoined tendon and external oblique are together connected with a continuous wire 'darn' to the pubic bone, Gimbernat's ligament, Cooper's ligament, and the recurved edge of Poupart's ligament. No tissue plane must be drawn out of alignment — the tissues are darned, not cobbled — the cord being lifted up with a loop of gauze and held out of the way. First a bite of the periosteum of the pubic bone is taken and the needle is then carried upwards and laterally to the conjoined tendon and external oblique, through which it is passed, then back to Gimbernat's ligament, and so on outwards to the internal ring. The strands of wire are placed about ¼ cm. apart. Sufficient room is left for the cord, and a return darn is then made which crosses the first layer roughly at a right angle. The cord is allowed to lie on top of the wire layers, after the two ends of wire have been joined by a reef knot near the pubis. A pair of fine artery forceps is placed next to the knot, the ends of wire are cut off flush with the artery forceps and then twisted with the forceps to bury them to prevent them from irritating the skin.

I used to suture only the conjoined tendon to the ligaments below and behind the cord and then secure the external oblique aponeurosis to the anterior edge of Poupart's ligament

in front of the cord, but have given up doing this as there was not sufficient room for the cord. In dealing with very large hernias in old people I usually persuade the patient to consent to orchidectomy on the affected side, as a stronger repair is possible when the inguinal canal can be completely closed. Patients sometimes give permission during an operation under local anaesthesia if one has forgotten to discuss the matter with them beforehand.

Postoperative Treatment

Water and glucose only are allowed until the bowels have opened. An injection of vitamin B_1, 250 mg. daily, is administered for 4 days and pethidine, 100 mg., may be given when necessary. An enema is administered as soon as flatus has been passed or borborygmi heard, then the patient may start having a light diet. Intravenous fluids and an antibiotic are advisable after operations on strangulated hernias. The patient is kept in bed for 7 - 10 days, and the stitches are removed after 7 - 14 days. He is discharged as soon as the wound has healed. After repairing very large hernias I try to persuade the patient to remain lying flat for 3 weeks, and to perform exercises to strengthen the abdominal muscles from the 14th day onwards.

Complications

The most common complications have been retention of urine and oedema of the scrotum.

Retention of urine is treated with amphetamine sulphate 5 - 10 mg., which diminishes congestion of the posterior urethra, followed in half an hour by carbachol 0·25 - 0·5 mg. subcutaneously. Catheterization is very seldom necessary.

Oedema of the scrotum is prevented by avoiding constriction of the cord at operation, and by elevating the scrotum afterwards. I know of no satisfactory method of accomplishing this. Usually a piece of strapping from one thigh to the other supports the scrotum when the patient leaves the theatre, but he soon manages to get his scrotum underneath the strapping. A sandbag placed under the scrotum seldom remains long in position. I have even tried slinging the scrotum up by strapping, cord, and pulley from a Balkan beam with a weight attached to the cord. But the effective elevation of a very large, empty scrotum remains for me an insoluble problem in the treatment of hernia! Fortunately most patients recover without developing oedema of the scrotum.

CASE REPORTS

The 5 most interesting cases in this series are described shortly below.

Case 1

An emaciated, anaemic African, aged about 50 years, was admitted to Sierra Leone Selection Trust Hospital, Yengema, Sierra Leone, in 1952, with a massive strangulated hernia. The operation was lengthy and difficult and a wire repair was done. He developed paralytic ileus postoperatively, and recovered only after a stormy convalescence. He was readmitted 1 year later with acute obstruction, and died before the theatre could be prepared. There was no recurrence of hernia. A postmortem examination was not performed, but the cause of death was thought to be obstruction, probably due to a band from the previously strangulated gut.

Case 2

An African, aged about 40 years, with a very large hernia, was admitted to the same hospital as the first patient on 22 December 1953. The small intestine and mesentery were adherent to the sac and were accidentally damaged. This necessitated resection of 3 inches of gut. The operation was completed under local anaesthesia, but this was not entirely satisfactory. However, the patient recovered completely.

Case 3

A Nauruan, aged about 45 years, was operated on for what was thought to be elephantiasis of the scrotum, at the Nauru Administration Hospital, Central Pacific, on 5 June 1958. There was no impulse on coughing, and the swelling, which had been present since childhood, seemed much too big for a hernia. The scrotal contents were found to consist of almost the whole of the transverse colon and the greater omentum. Considerable enlargement of the incision was necessary before the gut could be returned to the abdomen after excision of most of the omentum. The right testis was removed. The patient developed paralytic ileus, but recovered and returned to work. On 6 October 1959, when I last heard of him, he was well and continuing with his work as a bus conductor. During this operation the local anaesthetic was renewed after 2 hours, as the operation lasted 4 hours, but there was no complaint of pain at any time during the entire procedure.

Case 4

On 6 November 1959, an African, aged about 30 years, was operated on for an inguinal hernia which had been strangulated for 4 days. General anaesthesia was necessary for the resection of 8 feet of gangrenous small intestine, because traction on the mesentery caused severe pain under local anaesthesia. The patient made an uninterrupted recovery.

Case 5

On 31 March 1960, a White patient, aged 60 years, was operated on at Lilongwe European Hospital. He had a large right inguinal swelling, present for more than 30 years, and a recurrent left inguinal hernia. On the right side 2 hernias were found. The larger was indirect and the smaller direct, while on the left side a sliding hernia was found; this contained colon. The abdominal muscles low down on the right side had become too thinned out to be used for repair, but the fascia was dissected upwards for 2 or 3 inches to expose well-developed muscle from which the wire darn was carried down to the recurved edge of Poupart's ligament. The operations on both sides were performed with local anaesthesia. The entire procedure took 4½ hours, but the patient at no time made the slightest complaint. The patient was kept lying flat for 3 weeks, exercises to strengthen the abdominal muscles being started after 2 weeks. After a period of convalescence he returned to work.

SUMMARY

1. A method for repairing more than 150 inguinal hernias under local anaesthesia with stainless steel wire is described, including the pre- and postoperative treatment.

2. The reasons for using this method are given.

3. The most common complications encountered are dealt with.

4. Reports of 5 cases are included.

I wish to thank Mr. A. L. Abel, who demonstrated to me the method of employing stainless steel wire for the repair of an inguinal hernia in 1948, and my many skilled and unskilled assistants for holding the wire during these sometimes 'marathon' operations in various parts of the globe.

FORTHCOMING INTERNATIONAL MEDICAL CONFERENCES

Second International Congress on Mental Retardation. This Congress will take place in Vienna, Austria, on 14 - 19 August 1961. Experts will be invited to give lectures on the following subjects: (1) Organic causes of mental retardation, (2) endocrine disorders and mental retardation, (3) encephalopathy and mental retardation, (4) genetic and metabolic problems, (5) mental retardation caused by psychosis in childhood, (6) pseudo-feeblemindedness, (7) diagnostics and tests, (8) evaluation of histories, (9) social adjustment of mentally retarded children, (10) child guidance, (11) the physician and special schools, and (12) pharmacotherapy.

Besides papers presented by invitation, there will be a section devoted to the presentation of papers (maximal duration 15 minutes) by doctors who notify the Congress authorities of their intention before 31 December 1960. There will also be a scientific exhibition.

Further information may be obtained from: The Secretary, Zweiter Internationaler Kongress über Psychische Entwicklungsstörunger, Universitätskinderklinik, Lazarettgasse 14, Wien IX, Austria.

EDITORIAL : VAN DIE REDAKSIE

THE RÔLE OF A CASUALTY DEPARTMENT

The functions of a casualty department are most important in the every-day work of any hospital and, when mass casualties have to be dealt with, this department becomes the key-point in the organization of the hospital concerned. In an excellent comprehensive survey of the organization of a casualty department, on p. 825 of this issue of the *Journal*, Mr. T. Schrire discusses the rôle of the casualty department in the setting of the modern hospital.

He lists the four main functions of a casualty department applicable to all hospitals; namely, to treat casual patients when formal out-patient sessions are not in progress, to deal with accidents at any time, to attend to major and minor surgical infections, and to prevent infectious cases from entering the wards of a general hospital. In teaching hospitals there are two further facets of the work of a casualty department — to teach medical students and casualty officers and to take part in the research programme of the hospital.

The staffing of the casualty department is of importance. Where possible the medical staff should be of a more senior status than has been accepted up to now in most centres. It can be expected that any type of case will have to be dealt with, from the most trivial injuries to serious motor accidents, from coughs or colds to dramatic illnesses, medical, surgical, or gynaecological. Doctors who have to cope with such a variety of patients must have had a good deal of experience, must not get harassed under heavy pressure, and must be able to adjust their approach to every facet of medical practice. The nursing staff, too, should be of fairly senior status — a very junior nurse may not be able to take the responsibility that may easily come her way.

The suggestion that a senior member of the staff should be placed at the head of the department is a good one. With his greater experience, he can organize the work of the department to the best advantage, he can be of considerable assistance to his medical officers when serious cases have to be dealt with and, in times of emergency, when large numbers of casualties may have to be treated, his knowledge and presence will help the whole department to run smoothly and efficiently.

In a large teaching hospital, where specialists and senior members of the staff in many different fields are readily available, the work of the casualty department is eased, but in smaller hospitals, away from such assistance, a senior doctor at the head of the department will have an added and important function to perform.

It is important that a casualty department should have an adequate number of beds for its own cases. Many patients are brought to a casualty department who may require one or two days' observation — patients with possible head injuries who arrive in a drunken state; patients with abdominal or chest symptoms of doubtful aetiology, in whom the diagnosis will become plain in a day or two; and patients who have to undergo minor operations which require bed-rest and after-treatment for short periods, to name a few obvious examples.

There may well be no beds available in the general hospital wards for such patients, and to send them away for observation at home, often under very primitive conditions, places an enormous responsibility on the casualty officer. A suitable number of beds, in a ward close to the casualty department, where the casualty officers can keep a close watch on these patients, is most necessary.

The patient arriving at a casualty department with multiple injuries is in a special category. The arrangements at Groote Schuur Hospital for dealing with such patients, as outlined by Mr. Schrire, are obviously sound and can be recommended to all hospitals where they can be implemented. One senior member of the staff is in full control of the patient, and calls in other specialists as and when their services are needed for the particular patient. Thus all treatment is correlated and the most urgent measures are undertaken first.

It is in the sphere of mass casualties that the department's organization is tested to the full. Smaller centres, because of the natural limitations of size and facilities, cannot be expected to cope adequately with, say, fifty or sixty badly-injured patients. Nowadays, when modern forms of transport and the speeds they attain make the possibility of serious train or aircraft accidents a real and important danger, when civil disturbances or the outbreak of hostilities may lead to large numbers of persons being injured, casualty departments must have adequate plans in readiness to cope with these emergencies.

It is gratifying to learn that at Groote Schuur Hospital such plans have been made and have been tested in practice with excellent results. Mr. Schrire has set out *the ideal* towards which all casualty departments should strive. His article is a major contribution towards better casualty services throughout the country.

'N MODERNE ONGEVALLE-AFDELING

As gevolg van die lewensomstandighede van die moderne tyd neem die ongevalle-afdeling al meer 'n belangrike plek in in die samestelling van 'n hospitaal. In die verlede was dit dikwels die geval dat ongevalle-afdelings, selfs waar hulle verbonde was aan opleidingshospitale, 'n ondergeskikte plek ingeneem het. Nou is dit anders. Die eise van die moderne nywerheidstede en die metodes van vervoer, sowel as die feit dat groot gebiede van die stedelike en binnelandse bevolkings blootgestel is aan alle soorte potensiële gevare wat op massagrondslag kan toeslaan, maak 'n doeltreffende ongevalle-afdeling 'n essensiële deel van die uitrusting van hospitale in stedelike sowel as plattelandse gebiede.

Op p. 825 van hierdie uitgawe van die *Tydskrif* plaas

ons 'n artikel waarin dr. T. Schrire die organisasie van 'n moderne ongevalle-afdeling beskryf. Uit die werk wat hy gedoen het en die afdeling wat hy as toesighoudende hoof opgebou het, is dit duidelik dat 'n ongevalle-afdeling 'n baie groter rol kan speel as net 'n plek waar ligte beserings behandel kan word. Die belangrikste funksies van 'n afdeling soos hierdie word baie duidelik in die artikel uiteengesit.

Om mee te begin toon hy aan dat so 'n afdeling in staat moet wees om die probleme van alle soorte pasiënte — mediese sowel as chirurgiese gevalle, te hanteer gedurende tye wanneer daar nie ander formele buite-pasiënte ondersoeke is of toelatings kan geskied nie. Die ongevalle-afdeling moet dus op 'n dag-en-nag basis funksioneer, dwarsdeur die week en ook deur die naweek.

In die tweede plek moet die ongevalle-afdeling so georganiseer wees om sulke reserwes van personeel en ruimte te hê dat dit alle soorte ongelukke of beserings, veral die soort wat onverwags op groot skaal voorkom, kan hanteer. Ons dink hier byvoorbeeld aan beserings wat kan ontstaan as gevolg van treinongelukke, nywerheidsongelukke, disorganisasie van die samelewing deur opstande, oorlog, ens. Dit is *juis* die feit dat 'n ongevalle-afdeling sy werksaamhede moet kan uitbrei om groot aantalle pasiënte op kort kennisgewing te kan behandel wat 'n toets van die doeltreffendheid van so 'n afdeling is, want dit is in gevalle soos hierdie waar die addisionele hulp aan gewondes en beseerdes kan lei tot die redding van 'n groot aantal lewens.

In die derde plek moet die ongevalle-afdeling in staat wees om voorsiening te maak vir kleinere en grotere operasies in gevalle van infeksie. Die omvang van hierdie bedrywighede in die ongevalle-afdeling sal natuurlik onderhewig wees aan die algemene beleid van die betrokke hospitaal.

Vierdens is dit die taak van die ongevalle-afdeling om as 'n sorteerstasie te dien en toe te sien dat aansteeklike en besmetlike siektes nie sonder meer die hospitaal binnedring nie.

Dr. Schrire toon aan dat die faktore wat ons nou net genoem het al vier ter sprake kom as basiese uitrusting van enige ongevalle-afdeling. Daarby toon hy egter ook aan dat die ideale ongevalle-afdeling ook kan dien as 'n waardevolle opleidingsplek vir studente en ongevallebeamptes en dat dit ook kan dien as bron van en geleentheid vir belangrike wetenskaplike navorsing.

Vir almal wat 'n spesiale studie van hierdie saak gemaak het, moet die beginsels wat so duidelik deur dr. Schrire uiteengesit word baie welkom wees. As ons by die inrigting van ons mediese dienste die verbeelding sowel as die verstand wil gebruik kan dit daartoe lei dat ons meer en meer in staat sal wees om nie net noodsaaklike dienste te lewer nie, maar ook konstruktiewe voorbehoedende dienste. Ons wil die hoop uitspreek dat kollegas orals oor die land sal bydra daartoe om die beginsels wat uiteengesit word in die artikel waarna ons verwys aan te vul en uit te brei en om hulle dan op 'n groter skaal as in die verlede toe te pas.

PHENETHYLDIGUANIDE — PHENFORMIN — DBI — 'INSORAL'

This drug for the oral treatment of diabetes is now available on the South African market. It is rather doubtful whether its use can be recommended at present outside a specialized hospital department. Its real place in the treatment of diabetes is quite uncertain.

Chemically DBI is related to the synthalins, which were tried out in the 1920's but were found to be hepatotoxic. These drugs, however, were guanidines, and it would appear that the chemical differences in the diguanides are sufficient to render them very much safer. Damage to liver and kidneys does not seem to occur with DBI. Unfortunately, however, DBI is highly irritating to the gastro-intestinal tract, and a high proportion of subjects develop anorexia, nausea, vomiting, and diarrhoea before any therapeutic effect is produced. Weakness, lethargy and weight loss have been reported as later symptoms.[1] It is therefore necessary to start with small amounts of DBI (25 mg. per day at first) giving it with food and gradually increasing the dose. Even so, up to 50% of subjects (less in some reports) are unable to continue with the drug.

The hypoglycaemic action of DBI is quite different from that of the sulphonylureas (eg. tolbutamide) which appear to stimulate the pancreatic beta cells to release more endogenous insulin. DBI evidently inhibits certain oxidative enzymes[2] and increases anaerobic glycolysis, comparable to the effects of muscular exercise. There is a rise in blood lactic acid with the production of less energy than is provided by normal aerobic glycolysis. Further, the effects of DBI and exercise are additive;[3] there may be some danger in the rapid fall of alkali reserve when both agencies are working together. Moreover, in patients receiving DBI, ketone bodies may accumulate at relatively low blood-sugar levels, and one death has been recorded from ketosis under these circumstances.[3] If ketosis develops, dextrose and insulin should be given as soon as possible and DBI stopped. Furthermore it would appear that DBI should not be given with a diet which is very low in carbohydrate content.

Since DBI does not depend upon functioning pancreatic islet tissue for its activity, it might be expected to have some effect in the young insulin-requiring diabetic. Krall, from Boston, has reported rather favourably on its use in these patients.[4] Seventy-two patients with growth-onset diabetes were treated with either DBI or a closely related diguanide. In thirty-five he obtained successful control with either a reduced amount of insulin or with no insulin at all. In twenty-nine the drug was soon discontinued, usually because of gastro-intestinal effects; in eight there was a total failure. The best results were obtained with diabetes of recent onset (but these are the cases usually most easy to stabilize with insulin anyway). In general, the 'long-term' results (as far as they went) were satisfactory as regards continued control (absence of 'secondary failure'), absence of severe toxic effects, increase of height and weight, and delaying of the expected natural intensification of the diabetes.

As regards the use of DBI in the older 'maturity onset' diabetic, it may certainly succeed when diet alone and diet

plus sulphonylurea have failed to allow satisfactory control. Whether it should be used in these subjects is another matter, and in any event the proportion of patients who would reasonably qualify for a trial will be small.

In this country the Johannesburg workers did not have great success with DBI, as recently reported in this *Journal*.[5] It might be of use in those juvenile diabetics whose stabilization proves very difficult with insulin, and in those older people who are not controlled by lesser measures but find insulin, for various reasons, unsatisfactory. Its rôle in such cases still has to be worked out. It might be advisable again to sound the warning about stopping insulin in any patient of any age, unless a careful watch can be made, preferably under hospital supervision.

In summary it is probably true to say that by far the biggest drawback to DBI is the high incidence of gastro-intestinal symptoms which it produces. It is therefore a matter of pleasure to note that a new diguanide (a dimethyl derivative) has arrived in South Africa for clinical trial and that this drug seems to be far more easily tolerated. We shall look forward to hearing more of this in due course.

1. Odell, W. D., Tanner, D. C., Steiner, D. F. and Williams, R. D. (1958): Arch. Intern. Med., **102**, 520.
2. Williams, R. H. (1960): *Diabetes*. New York: Paul B. Hoeber.
3. Walker, R. S. and Linton, A. L. (1959): Brit. Med. J., **2**, 1005.
4. Krall, L. P. and Camerini-Davalos, R. (1958): Arch. Intern. Med., **102**, 25.
5. Schneider, T., Lopis, S. and Politzer, W. M. (1960): S. Afr. Med. J., **34**, 301.

THE ORGANIZATION OF A CASUALTY DEPARTMENT

T. SCHRIRE, M.A., M.B., CH.B. (CAPE TOWN), F.R.C.S. (ENG.),

Casualty Department, Groote Schuur Hospital and Department of Surgery, University of Cape Town

The casualty department is the shop front of any hospital, and for the sake of the good name and reputation of the hospital concerned, it is essential that treatment given there be expeditious, courteous and efficient. The casualty department is the only department seen by many patients, and the hospital is judged by the treatment they receive there. The importance of a casualty department will vary from one hospital to another. For example, a hospital situated in a highly industrialized area will require a casualty department able to deal with many hand injuries, whereas one which is situated in a more rural area may require a department which is smaller but orientated more towards dealing with serious traffic accidents.

All casualty departments have this in common — at any time a large number of people can unexpectedly be sent in for attention and this time can never be predicted; so that while flexibility is the main feature required in the department, there should also be extra facilities for great expansion if and when required.

Control of movement within the department is of far greater importance than large rooms, and much can be done with a little organizing. Where a large number of people usually attend, smooth and equitable handling would be assisted if each patient were given a numbered ticket on arrival, and the patients were called from the waiting rooms by their numbers. This ensures that the patient knows that he is getting a fair deal and that others are not 'jumping the queue'. It leads to a better understanding of the doctors' difficulties, to smoother running of the department and to less argument and fighting in the waiting rooms. Since on occasion knives have been drawn in our waiting rooms, the need for this smooth running is to us, at all events, very evident.

The basic needs of a casualty department are a waiting room and a reception room. If necessary, all the functions of the department can be performed using these 2 areas alone and, if their size is adequate, much valuable work can be done in them.

FUNCTIONS

The functions of a casualty department must first be defined. They are:

1. To treat casual patients* who may arrive during those times when formal out-patient sessions are not in operation, e.g., after hours and during week-ends.
2. To deal with accidents and injuries on a 24-hour day basis.
3. To attend to minor or major surgical infections according to the policy of the hospital concerned.
4. To prevent infectious cases from entering the wards by treating them as out-patients or in the casualty beds.
5. To teach medical students and casualty officers.
6. To act as a research instrument.

The first 4 functions are basic and essential to all casualty departments. The last 2 need well not be considered in the smaller non-teaching hospitals.

PERSONNEL

Head of Department

All hospitals which can afford to do so, are well advised to place a senior member of the staff in the position of head of the casualty department. This person's duties should be to organize the work and to integrate it with that of the rest of the hospital, to supervise the work of the casualty officers and to guide them in their duties.

By observing the run of work in the department over a period of some weeks, the head of the department will notice that there are certain times of the week which are busier than others. For example, Monday mornings (after the week-end) and Saturday mornings (when the out-patient department is not working fully) are busy times. Similarly, Friday nights and Saturday nights are the times when quite a few of our weekly wage-earners get into all sorts of scrapes after pay day and the department is heavily engaged in attending to drunken patients and those with cuts, stab-wounds and head

* This is the etymology of the word 'casualty'. The accepted meaning of 'injured person' only came into common usage in the 1914 - 1918 war.

injuries. On Saturday nights and Sunday nights, motor-car accidents occur. If these busy periods are carefully noted, it is possible to arrange the rota so that more doctors are on duty at these times to take the load off the individual casualty officer.

The head of the department should be responsible for arranging the rota of duties and should be available for consultation in the diagnosis and treatment of difficult cases and particularly for advice in connection with their disposal. The policy within the department as it concerns the treatment of surgical infections of various kinds, and the prevention of the abuse of antibiotics and of blood and blood substitutes, should be this person's responsibility. He should also maintain contact with prospective casualty officers so that he may have someone available to take up duties should a vacancy arise. The position offers endless scope for clinical work and great satisfaction in guiding an eager group of hand-picked young doctors.

Casualty Officers

The casualty officers themselves must be carefully chosen; for unless the proper personnel have been selected, the department cannot work efficiently. The ideal casualty officer should be a doctor, qualified for about 5 years, who has had about 2 or 3 years in private practice, who likes and understands people and, in a teaching-hospital post, is presumably on his way to a higher qualification. He should be friendly, courteous, polite and energetic, and should have a good knowledge of diagnostic procedures. He should be calm and well able to deal with any emergency that might arise, whether this be medical, surgical or gynaecological.

The number of patients that such a doctor can treat during the day varies with the individual but on an average about 30 - 40 new cases and 30 - 40 old cases, a total of about 60 - 80 patients, can be attended by one doctor in a session of 8 hours without excessive fatigue. There is always a certain amount of loss of efficiency towards the end of an 8-hour session and it should be the aim of the head of the department to see that sessions are so divided that this loss of efficiency and, in consequence, the loss of diagnostic skill, should bear as lightly as possible on the patients. We have found that splitting the 8-hour session into two is well worth while as it allows us to give our casualty officers plenty of off-duty time and free week-ends at regular intervals so that they can plan ahead and use their off-times to the best advantage. Having a contented group of keen casualty officers is the most important factor in successfully running the department.

The casualty officers should be called 'first', 'second', 'third', etc. according to the seniority of their appointment, as all will need to know their relative status in the department should an emergency arise. Larger hospitals should make arrangements for a minimum of 3 casualty officers as a working rule. This number allows for off-time, holidays and sick-leave, and at the same time enables a proper rota system to be established. If, as in many cases, it is possible to have only 1 or perhaps 2 casualty officers, some lack of efficiency must be accepted as the norm. With 6 casualty officers as a standard force, it has been possible in the Groote Schuur Hospital to arrange an emergency plan to deal with mass casualties should the resources of the hospital suddenly be faced with a large number of casualties. This emergency scheme will be considered later.

Since the number of patients attending daily can seldom be predicted with any accuracy, it is clear that if all the casualty officers are on full floor duties, there can never be any flexibility in the arrangements. It is therefore advisable to have a daily list of operations which are booked by the casualty sister-in-charge and to have one casualty officer, on a rotating basis, deputed to do these together with any emergency operations which may be necessary. This casualty officer will be occupied with his list of operations throughout the day in the casualty theatre but will be available immediately to assist in the department should any emergency arise.

In the same way we have found it expedient to separate the fracture cases from all the rest and to depute another of the casualty officers to attend to the casualty fractures in the orthopaedic department. This, in our hospital, is not a full-time occupation but in his free time this officer assists in the orthopaedic department with registrar status and he too can be called on in an emergency. We are fortunate in having the orthopaedic out-patient department on a separate floor of the hospital and the casualty officer working there carries out his duties under the supervision of that department. This arrangement, while it gives him every opportunity of learning the management of fractures, enables them to be kept under the single direction of the fracture unit of the orthopaedic department — a most desirable arrangement.

In this way, while the number on floor duty is never more than 3, within a few minutes 5 doctors can be standing by in an emergency and, by arrangement with the orthopaedic department and the department of surgery, many more registrars can be called in to assist in dire need. This special facility has not, as yet, been used; the casualty department has managed to cope with any local disasters without calling in additional aid from other departments.

Nursing Staff

A sister-in-charge and 3 or 4 nurses are the minimum necessary for running a busy casualty department. This allows for off-time, sick-leave, annual leave and accidents. A minimum of 2 trained nurses should always be present on the floor and it is best not to employ junior trainees in the department. All nurses should be fully immunized against the usual infectious diseases, and particularly against poliomyelitis, because the risk of infection is greater in this department than anywhere else in the hospital.

DESIGNING AND PLANNING A CASUALTY DEPARTMENT

In planning a casualty department it should be remembered that flexibility should be the most important consideration in the design. It should be designed so that control of movement is easy and so that the variations in numbers which occur from time to time will be taken up. While during certain emergencies anything up to a 100 people may suddenly arrive at a casualty department, it can be reasonably considered that if 30 people are handled every hour, the department is a very busy one.

Waiting Room

The first requirement is an adequate waiting room or waiting space. This waiting room should be the largest room in the department and should have benches for those patients who arrive on foot and require to wait. A certain area should be left clear of benches where patients who arrive by ambulance and are left lying on trolleys may be kept waiting until they can be seen by doctors in the various treatment rooms.

The waiting room should have 2 separate entrances, one for walking, the other for ambulance cases, and both types of patient should pass the records counter to receive their cards before being allowed into the waiting room (Fig. 1). The ambulance cases will naturally be given priority. The waiting room should be cheerful, painted in light colours in an easily washable paint and the floor should be made of waterproof material that can be washed down. The walls need not be tiled, as this adds to the coldness of the place. There is no objection to having paintings or frescoes on the walls but anything that can collect dust should be avoided.

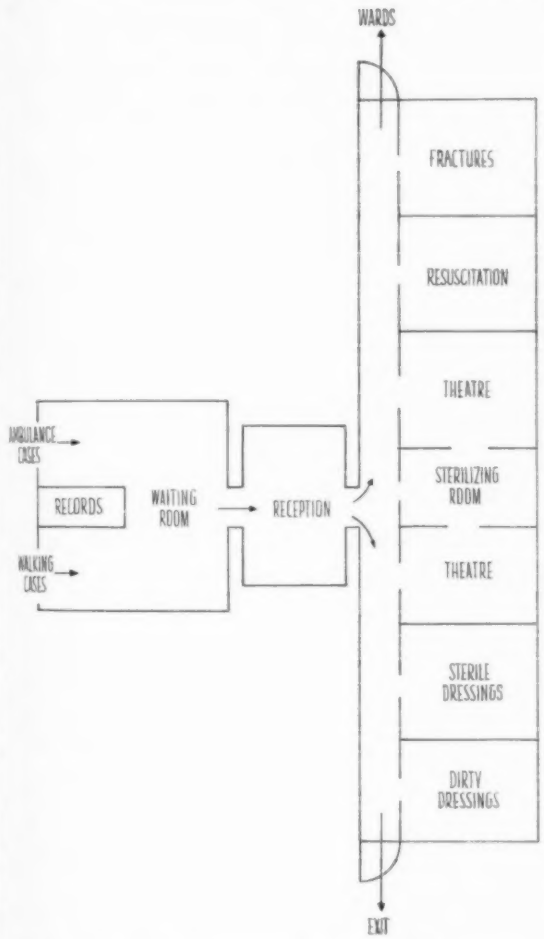

Fig. 1. Diagrammatic arrangement of an ideal casualty department.

Owing to poor design or to pressure of numbers, patients may try to wait in corridors; however, the smooth working of the department depends on corridors being free. If a hospital should find that for one reason or another its waiting facilities are inadequate, it should arrange to build a temporary waiting space rather than allow patients to use the corridors as waiting areas — this can only lead to confusion and collapse of smooth running arrangements.

Reception Room

The reception room should be furnished with a minimum of furniture, but requires a telephone, a desk and an X-ray viewing box on the wall. Two or 3 disrobing cubicles should be provided and the usual diagnostic instruments should be available. A history is taken at the desk and the patient is examined on one of several couches in the room. Side-room facilities for urine analyses and simple blood tests should be accessible and, in those hospitals where a blood bank is not on constant duty, there should be facilities for grouping and cross-matching blood. Plasma, plasma substitutes and solutions of 5% dextrose in saline should be in store cupboards.

A tourniquet should be close at hand and a sterile tracheotomy set in a sterile drum is a *sine qua non*. In addition, a pair of Safar plastic tubes*[1] should be kept within easy reach.

Half-a-dozen Thomas' splints of various sizes and a similar number of padded Cramer's splints should be ready for use in a nearby cupboard.

Dressing Rooms

Ideally, 2 dressing rooms should be available — a *clean dressing room* where stitches can be removed, clean wounds examined, and injections given, and a *septic or non-clean dressing room* where infected wounds that are being treated or have resulted from incising abscesses or infected areas can be examined and dressed. Although this is the ideal arrangement, it is not essential to have more than 1 dressing room; all the work of the casualty department can be done in this room quite efficiently, if proper precautions are taken.

An electric sterilizer which boils all day is uncomfortable; a steam sterilizer, with automatic cut-off and a fan extractor, will help to keep the dressing room clear of smells, bacteria, and steam. A steam sterilizer is also more efficient and much cheaper to run than an electric one.

Resuscitation Room

The resuscitation room is a separate room where oxygen should be piped and where suction is instantly available for keeping the patients' air-ways clear. However, this is a luxury and could well be replaced by similar facilities being made available in the theatre, reception rooms or dressing rooms. Cross-wires, strained at 7 ft. 6 in. above

* Safar plastic tubes are S-shaped tubes for mouth-to-mouth resuscitation. Under the trade name of 'resuscitubes' they are available in 2 sizes for adults and children and are made by Messrs. Johnson & Johnson (Pty.) Ltd., P.O. Box 727, East London.

the floor, should be put up in all these rooms and, from them, wire hooks of appropriate length for hanging bottles of blood and intravenous solutions should be kept suspended. In this simple way a room 15 ft. square can be used to accommodate 6 stretcher cases receiving intravenous fluids at the same time.

Theatres

The theatres of a casualty department differ in no way from those of the main hospital, except that the equipment need not be so elaborate. Thus, while it is unnecessary to equip a casualty theatre with full laparotomy instruments, there should be a full range of instruments for stopping haemorrhage, stitching wounds, opening abscesses and dealing with such minor plastic work as may be required in an emergency. Ideally, the casualty theatre-suite should consist of 2 theatres with a sterilizing room situated in between. These theatres should never be simultaneously in use so that one is always available for emergencies.

In addition to normal theatre equipment, the casualty theatre requires: (1) A tracheotomy drum in which a complete set of tracheotomy instruments with sterile towels are kept, (2) a cut-down drum which contains instruments for emergency intravenous cut-downs, and (3) a metal toolbox labelled 'I.P.P.R.' containing equipment for intermittent positive-pressure respiration — this metal box is sealed with a ring of gummed paper before use so that it can be seen at a glance whether it has been used; if so, its contents can be rechecked. It should contain the following equipment: (*a*) 1 ambu resuscitation bag, (*b*) 2 masks for this bag (one large, one small), (*c*) 3 metal air-ways (large, medium, small), (*d*) 5 portex intratracheal tubes (sizes 2, 4, 6, 8 and 10), (*e*) 1 laryngoscope handle with spare batteries and lamp, (*f*) 2 laryngoscope blades (small and large), and (*g*) gauze bandage for use as a throat pack.

X-rays

Since it is not usually practicable to have a complete radiological unit for the sole use of the casualty department, the closest liaison, on a 24-hour basis, must be maintained between the casualty department and the radiodiagnostic services of the hospital.

STERILIZATION

In all hospitals throughout the world, the hospital staphylococcus has been found after a time to have invaded the casualty department.[2] This problem is always with us and must be tackled energetically and continuously. Cupboards should be built-in or fixed to the walls and their tops made sloping so that dust cannot accumulate and so that odd objects cannot be placed on top of them for storing. The flat tops of instrument tables or dressing tables should be covered with glass or stainless steel sheeting. Walls must be painted at fairly frequent intervals and all projecting objects should be removed.

In spite of this, the hospital staphylococcus may become resident and must be attacked directly. At Groote Schuur Hospital we have found that spraying once a week with a solution of a quaternary ammonium compound which is lethal to the hospital staphylococcus, is most satisfactory. Many commercial preparations are available; the one we use is 'quaturg',† a quaternary ammonium compound, combined with a detergent, which is sprayed by our hygiene department in the early hours of 1 morning a week. Since this routine has been followed, our bacteriologists have reported a marked drop in the frequency of hospital staphylococci.

To promote asepsis our nurses are encouraged to use a 'no-touch' technique, but this slows the work down and, unless they are constantly supervised, the technique is as often broken as not. However, the nurses on dressing duties wear masks and gloves. The gloved hands are frequently washed with 'phisohex' which is available in wall-dispensers in all dressing rooms and reception rooms.

Hospital blankets must be frequently laundered and sterilized and the blanket cupboards in which they are kept should not stand in or be allowed to open into dressing rooms; they should be made to open either into the general waiting room or into hospital corridors where there is a free draught of air from outside the hospital.

THE USE AND ABUSE OF BLOOD AND PLASMA

Blood is usually required in the casualty department in a hurry. Patients arrive exsanguinated from medical, gynaecological or surgical causes, or after accidents and injuries of various kinds. Two bottles of blood, given at this stage, are much more valuable than many more given an hour later when it may be very difficult to restore the patient from a state of irreversible shock.[3] The blood must be carefully typed and this takes time.

We have come to use the following routine as being the safest for the patient. An intravenous drip is set up and, after drawing off a sample of blood for cross-matching and grouping, 2 bottles of plasma, each containing 250 c.c. are given immediately and as quickly as possible, if necessary under pressure. This restores the patient and gives everyone a few minutes in hand; a bottle of O Rh-negative blood is now substituted and by the time this has run in, correctly cross-matched blood should be available in almost unlimited quantities. In this way, it is possible to avoid reactions and at the same time to restore any patient's blood pressure to a reasonable level in the department with little risk of transfusion reactions. We have made it a rule that no patient, injured or exsanguinated or in shock, should leave the department unless his blood pressure is 100 mm.Hg systolic *and rising*.

Particular care is necessary in dealing with the elderly, with infants, and with those whose hearts are not in good condition. In these cases the margin between plethoric failure and anoxaemia is small and blood must be given very cautiously. It may be necessary in such cases to give at this time rather less blood than is thought adequate, and perhaps later on to give packed cells. One bottle given to an elderly injured person may upset the delicate hydraemic balance and put the patient into congestive cardiac failure.

† Distributed by Messrs. Westdene Products (Pty.) Ltd., P.O. Box 7710, Johannesburg.

A great deal has been written to indicate that indiscriminate intravenous therapy is dangerous. A careful assessment should be made using the appearance, the blood pressure and general condition of each individual as a guide. If in doubt, the blood pressure is taken at 5-minute intervals before starting intravenous fluids and proceeding only if the pressure does not rise.

Dextran and dextraven are very useful in places where blood and blood substitutes such as plasma are not readily available. We have not used these blood substitutes or fillers because our blood transfusion service informs us that cross-matching after these have been given is a lengthy and more difficult process. However, dextran has a small but limited place in acute injuries in the special circumstances indicated, and in burns its use has much to recommend it.

MULTIPLE INJURIES

Patients with multiple injuries fall into a peculiar and separate category. Apart from patients with head injuries, the highest mortality occurs in this group and the successful management and disposal of these difficult and dangerous cases puts an accident service and casualty department to its most severe test. Since no single surgeon can possibly be expert in all branches of traumatology, we have arranged that these patients are placed directly under the *personal* supervision of a senior surgeon who is expected to call on the services of the orthopaedic, neurosurgical, maxillo-facial, or other departments as the need arises. Special arrangements are also required for the in-patient treatment of such cases. As far as the casualty department's duties are concerned, resuscitation is carried out energetically with blood and other measures to overcome the shock, and the patient is moved from the department only when all arrangements are already made for attending to his most urgent injuries, the less serious ones being treated as the need arises, *secundum artem*, and by the experts concerned.

MASS CASUALTIES

Every hospital should have a plan in readiness for dealing with mass casualties. It is not enough to be able to handle these occurrences by routine measures; success in these matters is judged not only by the expedition and smoothness of the procedure and by the lack of upset of the hospital's general running, but primarily by the high percentage of lives saved and morbidity avoided.[4]

'The ingredients for production of a disaster are always with us; a crowded school bus and an unguarded railway crossing, a tornado and a city, a full plane and its critical moment of take-off and landing. These and many other circumstances can provide the potential for creating casualties in more than normal number'.[5]

Because of its prime position in the Western Province, the Groote Schuur Hospital must expect to be called upon to bear the bulk of the burden of any sudden onrush of casualties, and because of its resources both in personnel and equipment, it is right that this should be so.

The control officer at the Central Ambulance Station receives the first call for assistance. He sends out his ambulances and receives on-the-spot reports by radiophone from the first ambulance on the scene. He is then able to assess the approximate extent of the casualty list and to notify the casualty officer on duty at Groote Schuur Hospital. This notification arrives about 15 minutes before the first ambulance can possibly reach the hospital.

In general, the first ambulances carry the worst cases. Each can take 2 cases and the station controls 34 ambulances. The largest number of stretcher cases that could possibly arrive at one time can therefore hardly exceed 60.

It is clearly to be understood that the functions of the casualty department in this, as in lesser emergencies, are relatively simple, but require to be integrated into the general work of the hospital particularly with regard to the disposal of cases. In all these sudden increases in the normal number of casualties, the problem can be considered under the following headings: (1) receiving, (2) sorting, (3) disposal, and (4) information services.

The Fundamental Duties of the Casualty Department

As far as the casualty department is concerned, its fundamental duties in these emergency conditions are 3 in number: (*a*) To clear the air-way and maintain respiration, (*b*) to stop and/or to control haemorrhage, and (*c*) to combat shock.

On receipt of a telephone call from the control officer of the ambulance station indicating that a disaster has occurred and that mass casualties can be expected, the casualty officer on duty carries out the following steps in the given order:

1. Telephones the head of the department.
2. Telephones other casualty officers on duty, and calls in those who are not on duty to the casualty department.
3. Empties the casualty department of casual patients.
4. Collects trolleys from other departments in the hospital and places them in the casualty department.
5. Makes available labels and kit-bags.
6. Notifies the blood transfusion officer to be prepared to match blood or alternatively, in the absence of a blood transfusion officer, makes available whatever supplies of blood he has.
7. Sets up a desk information service.

Receiving the Patients

By the time the first ambulance has arrived at the hospital, the organization should be ready to receive the patients and an office where information can be given about those admitted should be set up. This latter is very important because otherwise it is inevitable that the hospital and casualty space will be flooded by anxious members of the public requiring to know more about their relatives.

The first casualty officer now proceeds to the waiting room and awaits the patients. The third, fourth and fifth casualty officers wait in the reception rooms and theatres. The second casualty officer meets the ambulances at the door and, going into the ambulances, checks whether the patients' air-ways are clear. He then sends them to the waiting-room where they are met by the first casualty officer who sorts them under the following heads:

1. *Respiratory obstruction.* Patients with respiratory obstruction are taken directly from the ambulances to the casualty theatre.

2. *Minor injuries, burns and fractures.* Patients suffer-

ing from these injuries are put in the waiting rooms to await treatment at leisure, and for these purposes it must be considered that all fractures are injuries whose definitive treatment may be delayed.

In general, a fracture must be treated as a case of urgency rather than emergency, but, in some cases of closed fractures of the femur, up to 2 pints of blood may extravasate into the haematoma and the surrounding tissues, and urgent replacement of this will be required before the shock can be overcome. Moreover, the pain associated with the unreduced fracture demands immediate relief even if proper splinting is applied. But the delay of a few hours (at the most) is permissible, if shock, haemorrhage, and pain can be controlled and if better facilities for treatment are made available within these few hours.

'Fractures kill through mismanagement; they should be splinted before the patient is ever moved. Otherwise, shock may develop and what could have been treated successfully, and leisurely, turns into another death'.[6]

It pays to place the fracture cases, even the compound fractures, on one side, and to deal with them later. This is possible at Groote Schuur Hospital because fortunately the orthopaedic department and the casualty department are physically separated so that the fracture cases can be handled at leisure and in the correct sequence.

3. *Shock.* Patients suffering from shock are placed on trolleys and are immediately wheeled into the resuscitation and reception rooms. It should be possible, using the simple arrangements described above, to handle 12 or 18 cases in 3 rooms on their trolleys with great ease.

4. *Haemorrhage.* Patients suffering from external haemorrhage are taken directly to the casualty theatre and the haemorrhage controlled. Later, treatment for shock may have to be instituted. This treatment is started in the theatre and continued in the resuscitation rooms. Patients with internal haemorrhage are sent to the wards or directly to the main hospital theatres after the shock has been treated.

5. *Non-ambulatory patients.* These patients, including those with fractures, are placed on wheelchairs or on trolleys and are seen by the senior casualty officer present who divides them into: (*a*) those requiring immediate attention, (*b*) those who can be sent up to the wards, and (*c*) those who, after treatment, can be discharged.

Blood

If a blood transfusion officer is on duty, he should have been alerted at the first instance. If not, blood should be made available as soon as possible.

Labels and Kitbags

Labels should be prepared and kept in the department to be tied onto the wrists of patients to identify them correctly. All drugs given, as well as a working diagnosis, should be entered on this label. *No drugs or blood should be given unless this is noted on the label.*

The kitbags are numbered pillowcases with drawstrings, which should be kept handy. They are invaluable for storing the patient's belongings.

Morphine

Morphine can be given to all patients who complain of pain but its use should not be indiscriminate, particularly in the case of patients in shock. It is best administered intravenously, ¼ gr. morphine being drawn up into a syringe and about half of this dose given immediately. As soon as the patient feels that the pain has been relieved, no more should be given and the amount and time should be noted on the label.

Operating Theatres

We feel that operating theatres play a very small part in the early management of mass casualties. The first casualties requiring theatre attention may not be ready for operation until at least 4 hours after the accident has occurred, so that it is unnecessary to disorganize the arrangements of any of the theatres by calling on them to begin preparations as soon as an incident is reported.

Disposal

If many patients need to be admitted after an incident, it is advisable to clear one ward of all occupying patients and to use this empty ward for taking all the patients from the particular accident. In this way they can all be kept under one authority and management is thereby greatly facilitated.

General Handling

Once the above organization for dealing with mass casualties gets going we have found that it can carry on indefinitely, handling many patients very expeditiously. The numbers that can ultimately be handled depends on the number of beds that can be made available in the hospital and is outside the control of the casualty department.

It will be observed that in this organization for treating mass casualties the head of the department is not allotted any definite duties. He is required to supervise the whole procedure and to see that the arrangements run smoothly. If he is surgically trained, he will be called on to help sort the cases. In this way the whole procedure can be accelerated.

'Who qualifies best to sort casualties? A surgeon with experience. The more prominent the surgeon the more important it is that he use his time to guide and direct work with the benefit of all his background training. In this way he can see 50 or 100 patients in the time required to operate on one of them. In a major disaster .... the goal must be to save the maximum number of lives'.[6]

Running all through the concept of handling casualties is the knowledge that it is not so much operating on the patients that is of primary importance as making the decision *when* to operate and in what order to deal with the individual lesions in cases of multiple injuries. It is in these decisions that the major responsibility lies and the head of the department will usually be required to undertake this responsibility.

ATOMIC WARFARE

This matter has been considered at length in most medical journals[7] and a report on South African conditions has been published recently.[8] It appears that 'great reliance will have to be placed on the services of sub-professional personnel' and that a new concept in medicine has arisen, viz. *triage*, whereby available medical officers will in the first instance be employed in casualty selection rather than for casualty

treatment. Since the number of casualties is likely to be overwhelming and the facilities for treating the casualties may themselves be involved in the incident, a considerable disorganization is to be expected. The principle of *triage* involves deciding whether a patient is going to survive or not and giving medical attention only to those who are likely to live. This heavy responsibility will have to fall on the surviving medical officers, and the casualty department will, to a certain extent, have to use the same criteria when giving treatment.

CONCLUSION

Some hospitals have made it a rule that no one, either on the medical or surgical side, should be considered as a candidate for appointment to the consultant staff unless he has had some experience of casualty work; this point may well be considered by the authorities concerned. A rule of this nature will ensure a good supply of casualty officers on the one hand and on the other it will, in due course, provide most smaller hospitals with a staff well-trained in basic traumatology.

It is only by training the personnel and by organizing our existing casualty departments that we can hope to provide the country with a better accident service — a service sorely needed, the lack of which is well recognized.[9]

SUMMARY

1. The organization of the casualty department at Groote Schuur Hospital is described.

2. It should be possible to arrange for a casualty department in smaller hospitals to be organized on similar principles using our experience as a guide.

3. The basic principles of the general treatment of injuries have been enunciated.

4. A system for handling mass casualties is described.

Dr. J. G. Burger, Medical Superintendent of the Groote Schuur Hospital, and Prof. J. H. Louw, Head of the Department of Surgery, University of Cape Town, are thanked for their interest in supporting the organization of the casualty department and for their helpful criticism and comments on this paper.

REFERENCES

1. Safar, P. and MacMahon, M. (1958): J. Amer. Med. Assoc., **166**, 1459.
2. Editorial (1960): Brit. Med. J., **1**, 1489.
3. Louw, J. H. (1958): S. Afr. Med. J., **32**, 337.
4. Holmes, R. H. (1953): *Recent Advances in Medicine of Military Importance*. Washington, D.C.: Walter Reed Army Medical Center. Cited in Editorial (1957): S. Afr. Med. J., **31**, 468.
5. Karansky, S. and Kierland, R. R. (1958): Proc. Mayo Clin., **33**, 125.
6. Shaeffer, J. R. (1958): *Ibid.*, **33**, 142.
7. Horak, J. (1958): S. Afr. Med. J., **32**, 126.
8. de Villiers, J. P. (1959): *Ibid.*, **33**, 1101.
9. Editorial (1960): *Ibid.*, **34**, 629.

WHAT IS NORMAL?*

A. G. RAMSAY, B.Sc., M.S., PH.D., *Department of Physiology and Pharmacology, University of Cape Town, and Cape Provincial Administration*

Physiology is the study of the normal functioning of the body. But what is meant by the term 'normal'? *The Concise Oxford Dictionary* defines the word as, '... conforming to standard, regular, usual, typical', and later as, '... the average or mean of observed quantities'. It is a term used and accepted every day but in biological science it has perhaps a more exact meaning.

In society a man acts, or is called, 'normal' if he is conforming to the standards of society. These are varying standards — varying with time and with place. The standards by which the normality of behaviour, ethics, morals, sex activity, dancing, art, or any human activity is judged are purely arbitrary and set up by convention and often by prejudice or bigotry.

In physiology and medicine 'normal' has a more precise and less transient meaning. A normal value, or a normal appearance, is something based on either measurement or deduction or both. This paper treats of 3 aspects of the normal, viz.:

1. How does one decide what constitutes a normal value?

2. How does one establish the precision of a normal value?

3. How does one decide whether a measured value is normal or abnormal in relation to the normal?

*This article is based on one of the introductory lectures in physiology for science and medical students at the University of Cape Town.

I

Before an answer is given to the first question it may be of profit to discuss some aspects of the 'scientific method'. Here is a simple and very ancient example of logic:

> All men are mortal,
> Socrates is a man,
> Therefore, Socrates is mortal.

This begins with a generalization, continues with a particular instance, and ends with a conclusion inevitable from the previous two statements. It is an example of deductive logic. Another example might be as follows:

> Adrenaline raises the blood pressure,
> This man has been given adrenaline,
> Therefore, this man has a high blood pressure.

This type of deduction is used every day and in all walks of life. Logical consistency is one of the basic criteria of science but deductive logic alone is worthless in natural science. To break this type of logic down all that has to be done is to ask how the initial generalization is tested, whether it is true, and how one knows. If the initial premise is not true, or is open to some doubt, or is not always true, or has only been established by unreliable methods, then no conclusion arising from it, however inevitable, need be true; it is no more reliable than the initial premise.

Note also that the conclusions reached in deductive

logic can be directly observed and established without recourse to logic at all.

The process of arriving at generalizations by direct observation of a limited number of particular instances was known in the past as inductive logic. It does not, however, need any logic to see that a conclusion covering every instance cannot of necessity be arrived at from knowledge of some isolated instances. The inference is possible or, at best, probable, in contrast to the certainty of deductive logic.

Actually, the process of induction, that is the recognition of a generalization or principle from examination of particular instances, is not a process of logic at all but of inspiration, intuition, or invention. It is an unconscious process which results in the formation of a hypothesis. Logic is then called in to test the hypothesis. This type of logic is used to greatest effect in natural science and is termed 'hypothetical-deductive logic'. For example, take the original syllogisms and alter them slightly, as follows:

If all men are mortal,
And Socrates is a man,
Then Socrates is probably mortal.

Or

If adrenaline raises the blood pressure,
And this man has been given adrenaline,
Then this man probably has a high blood pressure.

These syllogisms now begin with a hypothesis, continue with a particular instance and end with a qualified conclusion which may or may not, in fact, be true. If the conclusion, which is verifiable, is false, then the original hypothesis is rejected. If, however, the conclusion is true then the original hypothesis may be true. It may still be false, giving a true conclusion for the wrong reason. For example:

Hypothesis: Smoking causes lung cancer,
Particular instance: The number of people who smoke is increasing,
Conclusion: The number of people with lung cancer is increasing.

The conclusion reached is ascertainably true but the original hypothesis is extremely problematical to say the least, the true conclusion arising from other reasons most likely quite unrelated to the original hypothesis at all. This is also an example of spurious correlation, which is another story.

The testing of a scientific hypothesis requires deduction of every possible observable conclusion from it and comparing these with actual observation. If the hypothesis is a fertile and useful one it will lead to a large number of diverse conclusions which fit with observed facts, and the truth of the hypothesis becomes more and more probable, but it is never certainty. If the hypothesis is false, sooner or later it will fail and must be rejected or amended.

The testing of a scientific hypothesis is not always best done by its formulator, who may fail even to recognize an observed fact which is at variance with his brain-child. Perpetuation of inaccurate hypotheses also occurs because people learning a hypothesis as a fact during their formal education may thereafter refuse to alter their thinking through prejudice, ignorance, or sheer laziness. So many examples of this are available in natural science that it would be superfluous to mention one.

The methodology of statistics is a hypothetical-deductive procedure applied to quantitative problems. Discussion of some simple statistics is, of course, the whole point of this discussion. Be clear that by statistics one does not mean the '37 - 21 - 35' of the beauty queen. Those are not statistics, they are measurements or data. From them is derived the statistic that the lady is in pretty good shape! Here is an example of how statistics may be used as a hypothetical-deductive logic process:

A worker is investigating whether men are taller than women. This is done by measuring the heights of a group of men and a group of women. From these measurements is calculated the average height of each group and the variation in the measurements. The investigator finds that the average height of the group of men is greater than the average height of the group of women.

Then is set up what is known in statistics as a 'null hypothesis', which, on the pattern of our earlier syllogisms, might be something like this:

Hypothesis: If men and women are on the average of the same height,
Particular instance: And in this investigation the average height of the men was X inches and that of the women Y inches,
Conclusion: Then the difference between X and Y is probably purely from chance.

Simple statistical methods are then used to ascertain the probability that the conclusion fits with the observable facts. In other words, the odds are determined that the conclusion is true.

If the probability is high then the hypothesis is retained and the worker can say, 'On the average, men and women are the same height' or 'The difference in height found between men and women is not statistically significant'.

If the probability works out low then the hypothesis is rejected and the worker can say, 'Men are taller than women' or 'There is a statistically significant difference in height between men and women.'

The criterion of high or low probability is the only arbitrary measure in the analysis and of this more is said below.

Familiarity with statistical methods is indispensable to any scientist, medical practitioner, or student. Without some understanding of statistics he is like a soldier going into battle without a gun.

There has been a slight departure from consideration of the first question — How does one decide what constitutes a normal value? — but the point of the discussion will soon be apparent.

Consider the red-blood-cell count per c.mm. in healthy males as the normal value to be established. The total possible number of any one type of person or object is known as the *population* of that person or object. Naturally it is not possible to measure the RBC count in every member of the population being here considered.

and hence the process of induction must be followed. The measurements are made on a sample of the population and from these is induced a hypothesis for the total population.

It is assumed that the method of measurement gives reliable and accurate figures. If it does not, then any hypothesis or subsequent conclusion is invalid. No conclusion can be any more accurate than the method of measurement.

The sample that is measured should be what is known as a *random sample*, that is to say any member of the population must have as good a chance of being picked for the sample as any other member of the population. In the particular case being used as an example this is, of course, difficult, if not impossible, and of necessity there will be a sample which, depending on available resources, is more or less a *biased sample*. The larger the size of the sample the less chance there is of errors arising in any conclusion from this reason; in other words, the smaller will be the *sampling error*.

The data are thus collected from the sample of, say, 150 healthy males, and the readings are added together and divided by 150, the result being the average or *arithmetic mean*. The result is, say, 5·4 million RBCs per c.mm. The normal has been decided.

II

But how does one establish the precision of this normal value? Does it mean anything? Is it anywhere near the truth? If every measurement which was taken from the sample had been exactly 5·4 million per c.mm. then that figure could have been quoted as the normal value with a fair degree of confidence. However, it is a characteristic of living organisms that there be variation one from another and while the description of a set of data may be begun by calculating the mean, this single statistic obviously fails to reflect the variation that is present among the separate measurements. For example, a paper appeared some years ago describing a condition which the author, in his conclusions, stated 'was most prevalent at about 40 years of age'. It turned out that this figure had been arrived at by his having had two cases, one in a 6-month-old infant and the other in an 82-year-old man. Such sweeping generalizations are still, unfortunately, too common in reports from clinical medicine.

It is fortunate that description of the element of variation does not require that each of the separate items be named. Some people give a mean of their data and then add the range of measurements. For example, 'Height of 20-year-old men: mean 5 ft. 9 in., range 5 ft. - 6 ft. 5 in. On the face of it this seems better than a bare mean, but it still does not provide the information required, which is the precision of the mean.

A simple and exact scheme for describing variation is available since within almost all groups of biological data the measurements show a common pattern of distribution about the mean. Most of the measurements in a given group cluster around the mean, and then, as the distance on either side of the mean increases, fewer and fewer measurements occur. This known as a *normal frequency distribution*. It is illustrated graphically in Fig. 1. From

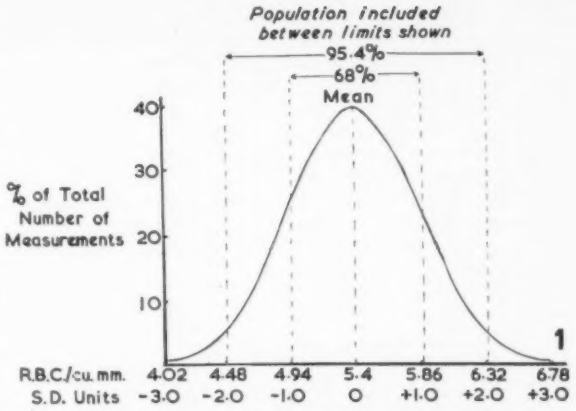

Fig. 1. The standard normal distribution curve.

any set of data it is now simple to calculate a single number which, when added to and subtracted from the mean, will mark out an interval which will include a known fraction of the total number of measurements. This statistic is known as the *standard deviation* or *S.D.*. Calculation of this figure is based on the deviations of individual measurements from the mean and it is given by the following simple formula:

$$\text{S.D.} = \sqrt{\frac{\Sigma(\bar{x}-X)^2}{N-1}}$$

Where $\bar{x}$ is the mean
X is each individual measurement
N is the number of measurements
Σ signifies 'sum of'.

Thus it is possible to write 'The normal RBC count in the healthy male is 5·4 million per c.mm. ± 0·46 S.D.

It should be noted that this is one of the few correct uses for the symbol (±). This symbol should never be used as shorthand for the term 'approximately' — it is incorrect and misleading.

An interval limited by one S.D. unit on either side of the mean, that is between 4·94 and 5·86, includes 68% of all measurements; two S.D. units include 95·4%; three S.D. units include 99·7% (Fig. 1).

The normal value has now been described in more satisfactory terms. There is a mean value and a figure giving the variation about this mean as a measure of the precision of the normal value. More can yet be done. From the sample mean can be obtained an estimate of the actual mean of the whole population — or rather the limits within which the sample mean could be at variance from the population mean may be estimated.

The bigger the sample the closer the mean will be to the population mean. The error connected with the mean when it is used to estimate the population mean is called the *standard error*.

The standard error (S.E.) is simply $\frac{\text{S.D.}}{\sqrt{N}}$. It should not be confused with S.D.

Using tables one may decide to any desired degree of confidence the limits within which the true normal value (the mean value of the population) lies.

III

The third and final question for consideration is this: How does one decide whether a measured value is normal or abnormal in relation to the normal?

It is an important medical problem to establish the normal average and degree of variation for various characteristics in order to provide a sound basis for detecting and differentiating the abnormalities of disease.

For example, a physician finds the RBC count of an adult male to be 4·5 million per c.mm. The question he must answer is, 'Is this count abnormally low and should the patient have treatment?'

Statistics can help to answer the question. The statistical question to be answered is, 'What is the probability of picking the patient out of the normal population by chance?'

This question is easily answered if the normal mean and S.D. is available, i.e. 5·4 ± 0·46.

This patient is $\frac{5{\cdot}4 - 4{\cdot}5}{0{\cdot}46} = 1{\cdot}96$ S.D. units below the mean. Since 95% of the population lie in the limits bounded by 1·96 S.D. units above and below the mean the chances, or rather the *probability* (P), of the patient being picked out by chance is $\frac{100 - 95}{2} = 2{\cdot}5$ in 100, i.e. P = 0·025.

Should this man be considered normal? This is the question now confronting the doctor. This question can be decided only on purely arbitrary grounds. It is conventional to choose one of two probability levels for this decision. Either 5 in 100 or 1 in 100. If the line is drawn at P = 0·05 then this patient is beyond normal limits and should be treated. On the other hand, if the line is drawn at P = 0·01 then the patient is not treated as abnormal. Statistics can only give the probability involved. Where normality ends and pathology starts must be decided on a quite separate and arbitrary basis.

This paper is an attempt to indicate the position of statistics in science and medicine, the logic behind statistical methods and their bearing on physiology.

Statistics, particularly biostatistics, is a wide subject but not a complicated one. One must never be shy of statistics but use them well; try to understand them and always appreciate this: Statistics prove nothing, they only help the human mind to come to a conclusion soundly based on the available data.

DOCTORING THE HEART OF THE ROBOT*

WILLIAM GIRDWOOD, M.B., M.Ch., B.Sc. (Med.) (Rand), F.R.C.S. (Edin.)

President, Southern Transvaal Branch, Medical Association of South Africa, 1959

Tonight, rightly or wrongly, I have chosen a philosophical subject. I am no philosopher, but it is part of my thesis that a man should have many interests; so I am trying philosophy.

In the face of the challenge of modern civilization, when techniques and mechanical developments and machines seem to outstrip our ability to live with them, and when we are on the very edge of man's qualitative leap to the stars — I ask myself the age-old questions: What makes a good doctor? What makes a good man?

Any day now I might open my newspaper and read: 'Man lands on the moon' or 'Man lands on Mars'. Wherever Man goes, there one will needs find his doctor, too. Can we carry our medicine into space? Would we be good doctors out there in space, without our aids to diagnosis and treatment? But what is good doctoring? Are we better doctors because of the years of contact with our patients and their families? Or is the ultimate criterion of good doctoring the passing of that final examination in medicine?

One of our established physician-teachers once said: 'I would much rather fall into the hands of a newly-qualified doctor; he is much better equipped than the older man'. On the other hand, Benjamin Franklin warned us: 'Beware of the young doctor and the old barber'.

Have we not a responsibility beyond that of merely doctoring our patients back to health with our maximum skill? Should we not exert our influence to return our patients to their own way of life with the minimum of disturbance, and with discretion and humanity allow them to make the most of their lives? Often patients have what seem to us to be peculiar ideas. For instance, I met an important man recently who strongly believes that a stocking, filled with chopped onions and wound round the neck, will cure a sore throat!

Should we not know what gives each patient confidence and courage to live — what makes life important to him? Should we not know what has done this for Man since the beginning of history? As a boy, I once had the temerity to ask a bishop: 'If there is a law of mass and energy, sir, which says they cannot be lost or destroyed, can there be a beginning and an end?' Here we have the challenge. In the immensity of eternity, in our nothingness, what makes our doctoring, and the return of our patients to life and health, a passion and a vocation?

Today we are painfully hobbling on the worn-out stick of our established creeds, on the very fringe of their elimination, while we are prepared to allow our culture and personalities to be parcelled up and speeded off into space. Also, there is the conflict between outstanding achievement and the apparently uninspired normality of individuals. In our ant-like world, depth conflicts with breadth. The broad thinker is classified as unscientific, the detailed recorder empirical.

Great achievement, however, does not mean a one-track mind. Think of Churchill, Leonardo, David, Imhotep, and Schweitzer, and think of the many doctors who have made great contributions to the world outside the sphere of medicine. Countless names spring to mind — among them Galen, Vesalius and Osler, and, in this country, Dr. James Barry and, of course, Jan van Riebeeck, the company surgeon who was destined to make his mark on history.

Our profession, perhaps more than any other, is knit from birth to death with all aspects of life — the high and the low; and this has been so throughout the history of civilized Man. Can we, as doctors, in our diffidence of spirit, venture into fields beyond the ken of the greatest minds?

JOURNEY THROUGH TIME AND SPACE

Suppose we could make a journey in a space-time machine — a journey that might help us find answers to our many questions. We could soar through outer space past millions and millions of stars in the Milky Way, and farther afield through other galaxies uncountable by Man. Is it no more than conceit that we can think that there are no other planets with life on them just like ours? Suppose we could land on a planet where conditions were like, say, those of ancient

* Extract from Valedictory Presidential Address, delivered in Johannesburg.

Babylon. If I had to perform an operation there, and failed, would they cut my fingers off? Would the inhabitants accept our advances without the rest of the exhortations and functions supplied by the priests? Would we need to carry lizard's blood, swine's ears and teeth, tortoise's brains? Would we carry masks and rattles? Would our prayers be enough? Who can give us the answers?

But with our space-time machine let us now take a journey in time back to ancient China, that land which has produced such philosophers as Lin Yutang, Confucius, and Laotze. The Chinese, above all, seem to be the race who gave most thought to the problem of organizing their masses into a way of life. If we landed in our space-time machine in the China of about 600 B.C., what would we find? Trying to follow in the footsteps of the master, Laotze, we would eschew thought, which is a superficial affair. It is good only for argument. In this philosophy, the intellectual man is a danger to the state, because he thinks of rules and regulations and laws. He wishes to construct society like geometry, and does not realize that such regulations destroy the freedom and vigour of the parts.

Still in China, 50 years later, we would find Confucius. He tried to educate the family. Sincerity and knowledge was his aim. What the 'higher man' of Confucius seeks is in himself, what the 'lower man' seeks is in others. The 'higher man' is distressed by his want of ability, not by his lack of fame.

In medicine, China had produced great physicians long before Hippocrates. As far back as 1122 B.C., under the Chou dynasty, the state held yearly examinations for admission to medical practice, and fixed the salaries of the successful applicants according to their showing in the tests.

If we continue on our space-time journey, we might land in Egypt as it was in about 3150 B.C. We could meet Imhotep, the renowned physician and grand vizier of Egypt. He would be designing the first pyramid of Cheops and the lovely lotus columns and limestone-panelled walls of King Zoser's temple at Sakkhara. We would come to see how this man, through his personality and greatness, could have been deified later as Aesculapius, the father of medicine of the Greeks, and how the ethical code existing in Egypt could have been the basis of the Hippocratic Oath.

Here in Egypt we could find papyri dealing with the medicine of those times. The Edwin Smith papyrus of 1600 B.C. describes, systematically, 48 cases of clinical surgery. The treatment of dislocated jaw is, for instance, beautifully described in this papyrus. As we wander through Egypt we could learn from the words of Ptahhotep, written in 2280 B.C.: 'Be not proud because thou art learnéd, but discourse with the ignorant man as with the sage. Beware of making enmity by thy words. Overstep not the truth, neither repeat that which any man, be he prince or peasant, saith in opening the heart'.

The Egyptians worshipped the source of life, the sun, and almost every form of life. The animals were gods, and these gods were so numerous that they filled the Egyptian pantheon like a menagerie. How little different are our 'gods' of today — our gods of golf, of fishing, of photography, of gardening, and of bowls. What doctor, like the Egyptian physician, would not wish to use these gods to establish a contented mind receptive to his doctoring!

What would we think of Ikhnaton, the husband of lovely Nefrotete, who, in 1830 B.C., ruined the economy of the nation by closing the temples and declaring all creeds but his own to be illegal? Ikhnaton, through love, Cortez, through war, destroyed great nations. One cannot thrust philosophy or doctoring by force on anyone. People must want good doctors. Doctors must want good medicine.

We can move on in our space-time machine to India, whose age-long civilization was born when we were savages. Indian medicine has long ranked high, and the oath of the early Hindu physicians, of whom Sushruta of the fifth century B.C. was one of the greatest, stated: 'Not for self, not for fulfilment of any earthly desire for gain, but solely for the good of suffering humanity should you treat your patient, and so excel all'.

China, Egypt, and India can look back through thousands of years of civilized life, life of great religions and philosophies. Surely we, as doctors, can learn a way of life from them and, by sifting the principles they held, arrive at a solution to our modern problems.

We can also learn much from the animal kingdom. We know that animals cannot exist without the primitive courage to fight for life itself. We know that the primitive humility of jungle law, of fear in the face of danger, is essential to life. We know also that without the primitive discipline of attentiveness and preparedness, life would soon be extinguished in the jungle. What we do not seem to know is that this law applies as stringently to us. Courage is demanded in different ways but is essential; the courage to stand against a flood of prejudice, the courage to fight (often alone) in a good cause, the courage to uphold tradition, the courage to lose and rise again.

CONCLUSION

What keeps us humble is the nature of our work and business. Marriage and family, too, play a part. Courtesy, modesty, and selflessness are all much-needed qualities in this critical world. Disciplines are inherent in the very structure of our lives; disciplines of family, parties, groups, rules and regulations, behaviour and occupation and, inevitably, our old enemy the clock. Courage, humility, and discipline are a universal requirement for life. Power, position, and money contain their own seeds of destruction. There is a mistaken idea prevalent today that Man has an instinct to overcome his fellow, to defeat him, to clamour for success. I am convinced that this is not so. The motto of the Olympic Games says: 'The important thing is not to win, but to compete'; likewise the essential thing in life is not to conquer but to learn how to fight in order to achieve victory over one's own problems in one's own way.

I believe also that in many ways we can create conditions which affect our character and our way of life. Confucius knew this. He said: 'Music regulates the heart and mind; it gives a natural, correct and gentle sincerity of the heart, it improves manners and customs'. This does not mean, for instance, that rock-'n'-roll music is wrong; it has its place and its time, and it has a beat and a rhythm which is incomparable. But the man who can appreciate great music is a man whose character is affected for the better. Confucius also said: 'Good manners too must be our care; when manners decay the nation decays with it'. And again: 'Add to the sage the graciousness of a gentleman'.

The Chinese, by creating culture, became the profoundest of men. They spoke, not of saints, but of sages, not of goodness, but of wisdom. The ideal was not the pious devotee but the mature and quiet mind. We must create conditions today where our doctors can have the time and the economic reward to give complete doctoring to the patient. We live in a unique era. We doctors are in a special position because of our long history of association with Man's health and, therefore, Man's happiness. I believe that anyone who contributes to the progress of civilization, in the way of service and healing and in the promotion of optimism and stability, or anyone who in any way works to improve living conditions or even knowledge, is adding to our way of life.

The world today is improvement-conscious. We have open minds, and we speak freely. We fight authority when we do not agree with it. We expect dangers and difficulties, criticism and opposition. We are our own tools, we plan our own lives, we are what we do.

Even as we grow older and begin to think we are no longer the useful doctors we were in former years, we will find that we are wrong. As Longfellow wrote:

> 'It is too late! Ah, nothing is too late
> Till the tired heart shall cease to palpitate.
> Cato learned Greek at eighty; Sophocles
> Wrote his grand Oedipus, and Simonides
> Bore off the prize of verse from his compeers,
> When each had numbered more than fourscore years . . .
> Chaucer, at Woodstock with the nightingales,
> At sixty wrote the Canterbury Tales;
> Goethe at Weimar, toiling to the last,

Completed Faust when eighty years were past ...
And as the evening twilight fades away
The sky is filled with stars, invisible by day.'

The doctor is the key link in all human activities. His duties and his scope have no bounds. He can be the spearhead in the civilizing urge of today. In this space-age, when personality and humanity can so easily be swamped, let the doctor bring a quality to his contacts which gives meaning to what is still the greatest profession of all.

SOUTH AFRICAN ORTHOPAEDIC ASSOCIATION (M.A.S.A.), ANNUAL CONGRESS, CAPE TOWN, 13 - 15 OCTOBER 1960

The Annual Congress of the South African Orthopaedic Association will be held in Cape Town on 13 - 15 October 1960. The Congress Programme is reproduced below for the information of members:

PROGRAMME

Thursday 13 October, Broadway Theatre, Heerengracht, Cape Town

8.45 a.m.	Registration.
9.00 a.m.	Opening remarks by the Chairman, Mr. R. C. J. Hill.
9.10 – 9.40 a.m.	Functional anatomy of the pelvis and lumbo-sacral angle: Mr. G. F. Dommisse, Pretoria.
9.40 – 10.10 a.m.	Studies on diagnostic localizations in lumbar-disc disease: Dr. Paul S. Harmon, San Francisco, USA.
10.10 – 10.40 a.m.	Intervertebral-disc excision and lumbar-spine fusion by a transperitoneal abdominal approach (report on 70 cases): Mr. S. Sacks, Johannesburg.
10.40 – 11.00 a.m.	Tea and registration.
11.00 – 11.45 a.m.	Aorto-iliac arterial occlusion: Prof. J. H. Louw, Cape Town.
11.45 – 12.45 p.m.	Fractures of the spine and their treatment: Mr. F. W. Holdsworth, Sheffield, England.
12.45 p.m.	Official photograph.
1.00 – 2.00 p.m.	Luncheon.
2.00 – 2.30 p.m.	Slipping of the capital femoral epiphysis: Dr. Beckett Howorth, Connecticut, USA.
2.30 – 3.00 p.m.	The origin of congenital anomalies and the control of form: Mr. T. L. Sarkin, Cape Town.
3.00 – 3.30 p.m.	An experiment in rehabilitation: Dr. D. I. Guthrie, Cape Town.
3.30 – 3.45 p.m.	Tea.
3.45 – 4.15 p.m.	Experimental nerve suture: Prof. J. Kirsten, Stellenbosch.
4.15 – 4.30 p.m.	Treatment of recurrent dislocation of the shoulder: Mr. T. B. McMurray, Cape Town.
4.30 – 4.45 p.m.	Two case histories illustrating some of the hazards in orthopaedic surgery: Mr. I. S. de Wet, Pretoria.
4.45 – 5.00 p.m.	Scalenotomy and its place in the cervico-brachial group of symptoms: Mr. L. Mirkin, Port Elizabeth.
7.30 p.m.	Annual Dinner, Executive Club, 1st floor, Broadway, Heerengracht, Cape Town.

Friday 14 October, Broadway Theatre, Heerengracht, Cape Town

9.00 – 10.30 a.m.	The treatment of flexor-tendon injuries in the hand: Mr. R. G. Pulvertaft, Derby, England.
10.30 – 11.00 a.m.	Tea.
11.00 – 11.30 a.m.	Pelvic obliquity in poliomyelitis — its recognition and treatment: Dr. Leo Mayer, New York, USA.
11.30 – 12.00 noon	Instability of the carpus: Mr. A. J. Helfet, Cape Town.
12.00 – 12.45 p.m.	The University of Cape Town artificial limb: Prof. C. E. Lewer Allen, Cape Town.
12.45 – 2.00 p.m.	Luncheon.
2.00 – 2.30 p.m.	The causes and treatment of non-union in fractures of long bones: Mr. E. A. Nicoll, Mansfield, England.
2.30 – 3.00 p.m.	The internal fixation of fractures — is it worth while?: Mr. R. C. J. Hill, Durban.
3.00 – 3.20 p.m.	Double oblique osteotomy: Mr. J. J. Commerell, Cape Town.
3.20 – 3.45 p.m.	The fibular bypass operation for non-union of the tibia: Mr. H. Bell, Cape Town.
3.45 – 4.00 p.m.	Tea.
4.00 – 5.00 p.m.	Annual General Meeting.
7.00 p.m.	Cocktail party at the home of Mr. J. J. Commerell, 'Vredenhof', Durban Road, Wynberg.
8.30 p.m.	Dinner-dance at the Vineyard Hotel, Protea Road, Newlands.

Saturday 15 October, Princess Alice Home, Retreat

10.00 – 10.15 a.m.	Film on 'Anterior cervical fusion': Dr. Paul S. Harmon, San Francisco, USA.
10.15 – 11.00 a.m.	Clinical cases presented by Messrs. A. and M. Singer, Cape Town.
11.00 – 11.15 a.m.	Tea.
11.15 – 11.30 a.m.	Presentation of clinical cases.
11.30 – 11.50 a.m.	Rehabilitative surgery in cerebral palsy: Mr. T. L. Sarkin, Cape Town.
11.50 – 12.00 noon	A method of localized fusion of the wrist joint; Mr. S. Schwartz, Cape Town.

UNIVERSITY NEWS : UNIVERSITEITSNUUS

AKADEMIESE JAARDAG, KARL BREMER-HOSPITAAL

Die jaarlikse Akademiese Jaardag van die Karl Bremer-hospitaal en die Fakulteit van Geneeskunde van die Universiteit van Stellenbosch, wat op 8 en 9 September in die Burgersentrum, Bellville, Kp. gehou is, was weer eens 'n baie groot sukses. Benewens die personeel van die Karl Bremer-hospitaal en lede van die personeel van die Universiteit van Stellenbosch, was daar ook 'n betreklike groot aantal mediese praktisyns uit die omgewing van Bellville en ook uit Kaapstad wat die jaardag bygewoon het.

Ongeveer 'n dertigtal referate, wat feitlik al die aspekte van die moderne medisyne behels, is gelewer. Alhoewel daar ook voordragte van algemene aard was, het die meeste van die referate gehandel oor oorspronklike navorsingswerk wat aan die Universiteit gedoen word. Die algemene indruk wat 'n mens gekry het was een van gesonde akademiese aktiwiteit wat hom in alle afdelings van die geneeskundige skool openbaar. Dit was veral treffend om te sien met watter groot vitaliteit sommige van die jongere departemente, soos byvoorbeeld die

departemente van patologie en mikrobiologie, gegroei het. Oor die algemeen was die gehalte van die referate besonder hoog. Dit is verblydend om te sien dat by die voorbereiding van voordragte deur sommige van die jongere lede van die personeel ook spesiale aandag gegee is aan taal- en stylversorging en literêre afronding.

Soos in die verlede was daar weer 'n groot en interessante uitstalling deur 'n hele aantal farmaseutiese firmas. Die hospitaal en die Fakulteit van Geneeskunde is groot dank aan hierdie firmas verskuldig vir hulle daadwerklike hulp en ondersteuning.

Die verrigtinge van die dag is afgesluit met 'n dinee-dans in die Sanlamsaal, Bellville. As gaste by hierdie geleentheid was o.a. teenwoordig sy Edele mnr. P. O. Sauer, Minister van Lande, Bosbou en Publieke Werke, (wat 'n sprankelende geleentheidstoespraak gelewer het); Sy Edele mnr. J. N. Malan, Administrateur van die Kaapprovinsie en mev. Malan; dr. S. J. Pretorius, Registrateur van die Universiteit van Stellenbosch en mev. Pretorius; prof. B. Bromilow-Downing, Dekaan van die Fakulteit van Geneeskunde van die Universiteit van Kaapstad en mev. Bromilow-Downing; dr. R. Retief, Direkteur van Hospitaaldienste en mev. Retief; dr. en mev. J. H. Cairns; dr. J. G. Burger, Superintendent van Groote Schuur-hospitaal en mev. Burger; dr. G. H. Hansmann, Adjunk Hoofbestuurder van Sanlam en mev. Hansmann; mnr. P. H. Meyer, L.P.R. vir Bellville en mev. Meyer, en mnr. W. F. van Riet, Burgermeester van Bellville en mev. van Riet.

Soos in die verlede is spesiale toekennings weer gemaak vir die beste referate en uitstallings wat gelewer is. As beoordeelaars het opgetree prof. F. du T. van Zijl, Dekaan van die Fakulteit van Geneeskunde van die Universiteit van Stellenbosch, prof. F. Forman, van die Universiteit van Kaapstad, en dr. A. P. Blignault, Redakteur, *Suid-Afrikaanse Tydskrif vir Geneeskunde*. Die volgende toekennings is gemaak:

Die F. du T. van Zijl-medalje is toegeken aan dr. F. M. Engelbrecht van die Departement van Fisiologie van die Universiteit van Stellenbosch vir sy bydrae oor: ‚Die invloed van silikonsuur op 'n paar respiratoriese ensieme'.

'n Spesiale geldprys is toegeken aan dr. C. L. Wicht vir sy bydrae (in samewerking met prof. H. W. Weber): ‚Verslag oor biopsie-studies van die perifere bloedvate in diabetes mellitus'. Die prys vir die beste uitstalling is toegeken aan dr. R. Fry vir haar uitstalling (saam met mnr. C. van Schaik) oor: ‚Gekleurde en wit-en-swart foto's, asook statistieke van verskillende selle wat in vaginale/servikale sitologie gesien is'.

OFFICIAL ANNOUNCEMENT : AMPTELIKE AANKONDIGING

MEDIESE HULP VAN VERSEKERINGSMAATSKAPPYE

Op 1 September 1960 is 'n vergadering gehou tussen 'n subkomitee van die Uitvoerende Komitee van die Federale Raad en verteenwoordigers van SANSOM en die Suid-Afrikaanse Onderlinge Mediese Hulpvereniging om sekere moeilikhede wat ontstaan het te bespreek, insluitende sake in verband met die erkenning deur die Vereniging van groepe wat as mediese hulpverenigings deur die versekeringsmaatskappye geadministreer word. Ook is die optrede van die versekeringsmaatskappye, wat nadelig is vir die dokter-pasiënt verhouding, bespreek. 'n Verslag van die uitslag van hierdie vergadering sal aan die volgende vergadering van die Federale Raad voorgelê word.

Onder andere het die bespreking ook gegaan oor sekere tjeks wat op die oomblik deur die Suid-Afrikaanse Onderlinge Mediese Hulpvereniging uitgereik word aan mediese praktisyns. Op hierdie tjeks dui 'n sekere kodenommer aan dat die waarde van die tjek op die mediese hulptarief van die Mediese Vereniging gebaseer is, en dat dit ‚aangebied word ter volle vereffening van die bruto bedrag van sulke rekening'.

Die sub-komitee het sy besware teen hierdie praktyk uitgespreek, maar die verteenwoordigers van die maatskappy het verduidelik waarom hulle dit ingestel het en verklaar dat hulle nie in die posisie is om hierdie praktyk te staak nie. Aangesien belangrike beginsels betrokke is, het die subkomitee besluit om nie nou dadelik rigting te gee aan lede van die Vereniging nie, anders as om aan te beveel dat hulle sover moontlik moet probeer om die tjeks te hou en nie 'n voldaan te teken of te deponeer voor die volgende vergadering van die Federale Raad nie. So gou moontlik na die vergadering van die Raad, wat gehou sal word op 19, 20 en 21 Oktober 1960, sal die besluit van die Federale Raad in hierdie verband aan lede van die Vereniging oorgedra word deur middel van 'n aankondiging in die *Tydskrif*.

A. H. Tonkin
Sekretaris

Mediese Huis
Kaapstad
8 September 1960

PASSING EVENTS : IN DIE VERBYGAAN

South African Institute for Medical Research, Johannesburg, Staff Scientific Meeting. The next meeting will be held on Monday 3 October at 5.10 p.m. in the Institute Lecture Theatre. Dr. F. A. Brandt will speak on 'Clock-watching in the laboratory'.

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University of the Witwatersrand, Medical Graduates Association. The next postgraduate refresher course for general practitioners will be held on 16 - 21 January 1961. In view of previous demands on the number of vacancies, doctors are urged to enrol as soon as possible if they wish to attend this course.

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Dr. Ronald Singer, Senior Lecturer in Anatomy at the University of Cape Town, has recently returned from the USA where he spent a year as Visiting Professor of Anatomy at the University of Illinois College of Medicine in Chicago. Dr. Singer also lectured at many other universities and research institutions in the United States and in Europe; and, as a member of the International Committee for the Standardization of Human Biology, gave an address at UNESCO in Paris.

Dr. Harry Mukheiber, M.B., Ch.B., M.Med. (O. & G.) (Cape Town), M.R.C.O.G., has commenced practice as a gynaecologist and obstetrician at 406 Southern Life Building, St. George's Street, Cape Town. Telephones: Rooms 2-0462, after hours 2-0462, if no reply 3-1256.

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Dr. and Mrs. Leslie Chait, of Cape Town, are at present on an overseas vacation. While in Europe, Dr. Chait attended the Fourteenth General Assembly of the World Medical Association on 16 - 22 September in Berlin.

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Mr. Roy O. Wise, M.B., B.Ch. (Rand), F.R.C.S. (Eng.), F.R.C.S. (Edin.), has commenced practice in partnership with Mr. Mannie Stein at 306 Colonial Mutual Buildings, West Street, Durban. Telephones: Rooms 63294, 63249; residence 36815; emergency 63737.

Dr. Roy O. Wise, M.B., B.Ch. (Rand), F.R.C.S. (Eng.), F.R.C.S. (Edin.) het begin praktiseer as spesialis-chirurg in vennootskap met dr. Mannie Stein te Colonial Mutualgebou 306, Westraat, Durban. Telefone: Spreekkamer 63294, 63249; woning 36815; noodoproepe 63737.

Burroughs Wellcome & Co. (South Africa) Ltd., have recently changed the address of their Cape Town depot which is now situated at 323 Voortrekker Road, Maitland, Cape Town (P.O. Box 46, Maitland). The new telephone number is 51-4816.

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University of Cape Town and Association of Surgeons of South Africa (M.A.S.A.), Joint Lectures. The next lecture in this series will be held on Wednesday 28 September 1960 at 5.30 p.m. in the E-floor Lecture Theatre, Groote Schuur Hospital, Observatory, Cape. Mr. A. Dickson Wright, F.R.C.S., of London, will address the meeting. The subject of his talk is still to be arranged. All members of the Medical Association are welcome to attend this lecture.

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Margaret Orford Memorial Fund Lecture 1960. At 8.15 p.m. on 28 September Mr. A. Dickson Wright, F.R.C.S., past Vice-President of the Royal College of Surgeons of England, will deliver the Margaret Orford Memorial Lecture in the Physiology Lecture Theatre, Medical School, Observatory, Cape. The subject of the lecture will be 'Urinary complications of gynaecological surgery'.

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Dr. M. C. Gerber, M.B., Ch.B. (Kaapstad), D.A. (Rand), het as narkotiseur begin praktiseer in vennootskap met dr. L. Rautenbach te Listergebou 602, Jeppestraat, Johannesburg. Telefone: Spreekkamer 23-4733, woning 59-1515.

Dr. M. C. Gerber, M.B., Ch.B. (Cape Town), D.A. (Rand), has commenced practice as an anaesthetist in partnership with Dr. L. Rautenbach at 602 Lister Buildings, Jeppe Street, Johannesburg. Telephones: Rooms 23-4733, residence 59-1515.

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Charles F. M. Saint Theatre Suite. The main theatre suite at Groote Schuur Hospital, Observatory, Cape, has been renamed the Charles F. M. Saint Theatre Suite in honour of Professor Saint, the first Professor of Surgery of the University of Cape Town.

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Dr. William G. Slate, M.B., Ch.B., M.S., F.A.C.S., formerly Assistant Professor of Obstetrics and Gynecology at the University of Illinois College of Medicine in Chicago, has joined the College of Medical Evangelists in Los Angeles, California, as Associate Professor of Obstetrics and Gynecology. Professor Slate became a Diplomate of the American Board of Obstetrics and Gynecology in April 1960.

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Dr. L. A. Sarembock, M.B., Ch.B. (Cape Town), M.S. (Urol.) (Temple Univ., Phila.), F.R.C.S. (Edin.), has commenced practice as a urologist at 901 Medical Centre, Heerengracht, Cape Town. Telephones: Rooms 2-4277, residence 44-4187.

Dr. Sarembock has spent 8 years doing postgraduate work at various centres in the UK and the USA.

Dr. L. A. Sarembock, M.B., Ch.B. (Kaapstad), M.S. (Urol.) (Temple Univ., Phila.), F.R.C.S. (Edin.), het te Mediese Sentrum 901, Heerengracht, Kaapstad, begin praktiseer as 'n uroloog. Telefone: Spreekkamer 2-4277, woning 44-4187.

Dr. Sarembock het 8 jaar lank nagraadse werk gedoen aan verskeie sentrums in die V.K. en die V.S.A.

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Cripple Care Lecture. Mr. R. G. Pulvertaft, of Derby, England, will deliver the Cripple Care Lecture at 8.15 p.m. on 3 October in the Harveian Lecture Theatre, Medical School, Johannesburg. The subject of his lecture will be 'Advances in hand surgery'.

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Margaret Orford Memorial Fund Lecture 1960. At 8.15 p.m. on 4 October Mr. A. Dickson Wright, F.R.C.S., past Vice-President of the Royal College of Surgeons of England, will deliver the Margaret Orford Memorial Lecture in the Harveian Lecture Theatre, Medical School, Johannesburg. The subject of the lecture will be 'Urinary complications of gynaecological surgery'.

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Ophthalmological Society of South Africa (M.A.S.A.), Cape Town Sub-Group. The next meeting of this Sub-Group will be held on Tuesday 27 September at 8 p.m. sharp in the A-floor Lecture Theatre, Groote Schuur Hospital, Observatory, Cape. The meeting will take the form of a symposium on 'Lid tumours'. Speakers: Dr. J. G. Louw (introduction), Dr. C. J. Uys (pathology), Mr. D. Davies Jnr. (plastic application), Dr. L. Schrire (chemical treatment) and Dr. I. Shulman (radiotherapy). All practitioners who are interested in this subject are invited to attend the meeting.

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Dr. Basil L. Goldschmidt, M.Med. (Paed.) (Cape Town), D.C.H. (Lond.), formerly on the staffs of the Departments of Child Health of the Universities of Manchester and Cape Town, has commenced practice as a paediatrician at 208 Pier House, Heerengracht, Cape Town. Telephones: Rooms 3-6337, residence 71-5345, if no reply 3-1256.

Dr. Basil L. Goldschmidt, M.Med. (Paed.) (Kaapstad), D.C.H. (Lond.), voorheen op die personeel van die Departemente van Kindergesondheid van die Universiteite van Manchester en Kaapstad, het as kinderspesialis begin praktiseer te Pier House 208, Heerengracht, Kaapstad. Telefone: Spreekkamer 3-6337, woning 71-5345, indien geen antwoord 3-1256.

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Medical Graduates Association, University of Natal. The first Annual Dinner of this Association will be held at 8 p.m. on Saturday 8 October at the Delhi Restaurant, Durban. Tickets are £1 5s. 0d. each. Graduates, members of staff and their wives have been invited. The guests-of-honour will be the Hon. and Mrs. E. H. Brookes.

NEW PREPARATIONS AND APPLIANCES : NUWE PREPARATE EN TOESTELLE

QUATURG AND GILL G - 11

Westdene Products (Pty.) Ltd. introduce Quaturg and Gill G - 11, and supply the following information:

The serious emergence of antibiotic-resistant strains of staphylococci as well as the necessity to control general cross-infection, has resulted in the calling together of special conferences. The proceedings of these conferences have shown that it is imperative to adopt rigorous control measures throughout all hospitals.

Staphylococci remain viable for long periods and are carried from place to place so easily that they are found throughout a hospital — in isolation wards, operating rooms, wards, nurseries, linen rooms, kitchens, bathrooms, etc. Hand contact with these surfaces, as well as contamination from infected wounds, skin lesions, etc. make it essential to adopt rigorous aseptic hand-washing techniques to prevent contact infection, which is regarded by some authorities as being, perhaps, the most important route of transmission of staphylococcal sepsis.

A preventive programme is now being offered by Westdene Products (Pty.) Ltd., to eliminate 2 of the main sources of infection, viz. environmental and hand contamination, with consequent reduction in dust-borne bacteria.

A New Approach For Environmental Control

The use of soap, detergent, and water cleaning is not the answer to reduction in staphylococcal infection because soap solutions cannot be relied upon to kill staphylococci.

Ordinary disinfectants manifest little detergency and can only function satisfactorily on clean surfaces, and they cannot be combined with soaps or detergents without adversely affecting their germicidal activity.

Quaturg for Germ-free Premises

True cleanliness in a hospital calls for the use of a safe, effective, combined product that will not only cleanse, but will also simultaneously destroy pathogens on all types of surfaces — from absorbent blankets to hard bathroom fittings, from

delicate materials to greasy floors, from theatre equipment to kitchen utensils.

Harmless, non-toxic, non-irritating Quaturg, the proved, all-round, versatile product, provides the answer to germ-free hospital premises. It is an odourless liquid that saves time, because it removes grease and dirt and disinfects in a single application. It provides hospital insurance at no extra premium because it is so economical to use — only 1 - 2 tablespoonfuls being required for 1 gallon of water (even hard water). Yet, in this low dilution, it destroys Gram-positive and Gram-negative pathogenic bacteria including antibiotic-resistant staphylococci; and leaves a residual antibacterial film that attacks organisms deposited between washings.

Aseptic Hand Washing

Of all known methods of controlling spread of bacteria from the cutaneous surface, antiseptic liquid soaps with hexachlorophene (G - 11), have been the most widely accepted. Due to prolonged residual activity, as well as ease of application, liquid soaps with hexachlorophene are being increasingly used, not only for pre-operative washing, but also for routine use by all hospital personnel.

The USP has acknowledged the status of this type of soap, by including, in its 15th revision, the 'liquid soap form of hexachlorophene' to the exclusion of all other types of 'antiseptic' soaps.

Fortunately the staphylococci that have emerged as antibiotic-resistant acquire no resistance to G - 11; a number of attempts have been made to adapt them to increasing concentrations of G - 11 but with no success.

'Gill' G - 11 containing hexachlorophene and modified lanolin ensures an effective method of achieving 'surgical' cleanliness for all hospital personnel; and its use will certainly provide a major prophylactic weapon in the elimination of staphylococci.

Further information may be obtained from Westdene Products (Pty.) Ltd., P.O. Box 7710, Johannesburg.

BOOKS RECEIVED : BOEKE ONTVANG

Intraarterial Infusion of Procaine in Therapeutic Practice. By N. K. Gorbadei, with a supplement: The Treatment of Patients with Hypertension by Intraarterial Infusion of Procaine Solution by I. I. Velikanov. Translated from Russian. Pp. 135. Illustrated. $7.50. New York: Consultants Bureau, Inc. 1960.

Current Approaches to Psychoanalysis. The Proceedings of the 48th Annual Meeting of the American Psychopathological Association, held in New York City, February 1958. Edited by Paul H. Hoch, M.D. and Joseph Zubin, Ph.D. Pp. xiii + 207. $6.50. New York and London: Grune & Stratton, Inc. 1960.

Experimental Surgery. 4th edition. By J. Markowitz, *M.B.E.*, M.B. (Tor.), Ph.D., M.S. in Exp. Surg. (Minn.); J. Archibald, D.V.M., M.V.Sc., Dr. Med. Vet. (Giessen), M.R.C.V.S. and H. G. Downie, D.V.M., M.S. (Cornell), M.V.Sc. Pp. 800. 580 illustrations. 16 coloured plates. £5 0s. 0d. plus 2s. 9d. postage. London: Baillière, Tindall and Cox Ltd. 1959.

The Year Book of Opthalmology, 1959 - 1960. Edited by Willam F. Hughes, M.D. Pp. 406. 95 figures. $8.00. Chicago: Year Book Publishers, Inc. 1960.

Science and Psychoanalysis. Vol. III. Psychoanalysis and Human Values. Edited by Jules H. Masserman, M.D. Pp. xiv + 377. $11.00. New York and London: Grune & Stratton, Inc. 1960.

Protides of the Biological Fluids. Proceedings of the 7th Colloquium, Bruges, 1959. Edited by H. Peeters. Pp. x + 420. Illustrated. £3 16s. 0d. London: D. van Nostrand Co. Ltd., distributors for Elsevier Publishing Co. 1960.

Bedside Diagnosis. 5th edition. By Charles Seward, M.D., F.R.C.P. (Edin.). Pp. xix + 479. 25s. net + 1s. 5d. postage abroad. Edinburgh: E. & S. Livingstone Ltd. 1960.

Diabetes. With a chapter on *Hypoglycemia.* By 54 authors. Edited by Robert H. Williams, M.D. Pp. xvi + 793. 192 illustrations, 23 in full colour. $20.00. New York: Paul B. Hoeber, Inc. 1960.

A Symposium on pH and Blood Gas Measurement. Methods and interpretation. Report of a meeting held under the auspices of the Ciba Foundation, London, 2 and 3 December, 1958. Edited by Ronald F. Woolmer, V.R.D., B.A., B.M., F.F.A.R.C.S., assisted by Joy Parkinson, B.A. Pp. ix + 210. 48 illustrations. English price 30s. net. London: J. & A. Churchill Ltd. 1959.

CORRESPONDENCE : BRIEWERUBRIEK

PAYMENT FROM INSURANCE COMPANIES

To the Editor: Is there any justification, either moral or legal, for an insurance company such as the South African Mutual Medical Aid Society, which at the present moment is not a recognized medical aid society, to deliberately forward cheques to doctors, based on the Tariff of Fees for Approved Medical Aid Societies, in full settlement of claims of patients who are insured by them?

In my opinion this is most illegal and immoral. The above-mentioned company, as far as I know, is the only one who is taking this liberty with doctor's accounts. Surely our Medical Association is not so inadequate as to be unable to cope with this irregular behaviour.

J. Lannon

Lady Dudley Nursing Home
Hospital Hill
Johannesburg
9 September 1960

PAYMENT FROM INSURANCE COMPANIES

To the Editor: Since SANSOM and the South African Mutual Medical Aid Society started paying their cheques direct to members of the profession, the amount of clerical work involved in the settlement of accounts has more than doubled itself.

Those of us who have remained loyal to the Association and have continued to treat people insured by these Societies as private patients, have found the added clerical work involved in collecting small outstanding amounts more than ordinarily burdensome. It has often been my experience that, after months of delay, a cheque for the equivalent medical aid fee arrives but the balance is not paid. I understand that patients insured by these Societies are encouraged to attempt to get the fees reduced to those of the Tariff of Fees for Approved Medical Aid Societies. I am not surprised at the standard of the ethics involved, but I am staggered at the number of members of the profession who are prepared to accept the position.

The prediction that the medical aid society movement would eventually control the profession is rapidly coming true and, so far at any rate, the Association has given no clear lead how to combat this danger.

As far as patients insured with the above Companies are concerned, I now inform them at their first visit that they are *not entitled to a reduced fee* and that any cheques forwarded by these Societies direct to me will be returned unless accompanied by the balance due. This helps to dispel any possible doubt in the patients' minds whether the advice from their insurance companies to 'try it on' will succeed or not.

I would sincerely recommend this procedure to my colleagues.

Justin van Selm

Southern Life Building
101 St. George's Street
Cape Town
6 September 1960

ABOLITION OF THE TARIFF OF FEES FOR APPROVED MEDICAL AID SOCIETIES

To the Editor: I am rather diffident about advocating a departure from a well-established arrangement, but to my mind it is time serious thought is given to the question of the abolition of the Tariff of Fees for Approved Medical Aid Societies.

In order to bring the matter into proper perspective it must be remembered that the Tariff originated through the desire of medical practitioners to be paid direct and in full by medical aid societies (originally the United Banks' Medical Aid Society). At first a discount on the ordinary fees charged to private patients was granted, such discount going to the funds of the society in order to cover the costs of administration. Then it was found that the fees charged by doctors individually and in various parts of the country varied to such an extent that an approach was made to the Association for a fixed tariff, so that the societies could budget for probable expenditure and check accounts properly. Such a tariff was compiled after some years of negotiation. The discount remained, but was finally abolished in 1947 when a Union-wide Tariff was agreed upon. The abolition of the discount was agreed to by the medical aid societies with great reluctance because of the increased expenditure which they anticipated. Since 1947 the Tariff fees have been paid in full.

There did not seem to have been any serious discussion on 'income' at the commencement of the negotiations. Rather was the discount on accounts offered in return for 'assured payment'. Probably that was due to the societies being few in number and the constitution of their membership well known. Only in 1948 was an average income for the group laid down and an indication given that the Tariff was intended for persons earning up to £1,500. However, some societies, which were already approved at that time, had quite a number of persons in a higher income group.

With the growth in the number of societies, practitioners began to complain more and more about the alleged number of members in the higher income categories whom they were supposed to treat at medical aid rates. This resulted in the laying down of an income ceiling of £2,500 (gross) and the insistence that only 3% of the members of a society should be in receipt of an income exceeding £1,500 (later £1,750). A further result was the continual pressure being applied by members of the Association for increases in the Tariff of Fees.

A fact which has been lost sight of completely is that the majority of members of medical aid societies earn less than £600 *per annum* (*vide* paragraph 2 of Clause 2 of the General Rules Governing the Tariff). A few years ago statistics provided by the societies showed that 75% of their members earned less than £600 (basic) and only 0·8% earned over £2,500. In other words, doctors are being paid direct at the Tariff rates for services rendered to people who, in the ordinary course of events, would not be able to pay anything at all, or are able to pay only in part or in small instalments, while only very few are treated at a 'reduced rate'. It must also be remembered that many members of the Association conduct practices in which the prevailing proportion of patients consist of members of medical aid societies in the lower-income group. In its negotiations with medical aid societies I am sure the Central Committee for Contract Practice was guided by the principle of reaching the best arrangement for the greatest number of the profession.

The insistence that the rules governing the income structure of medical aid societies be enforced, even on societies recognized before such rules were adopted, has increased; while the clamour for increased fees has continued. The extent of this clamour has reached a position where a fee higher than the customary private fee has already been proposed.

In the negotiations with medical aid societies it has become clear that the control of the income group, apart from an average figure, is a very difficult matter, as individual salaries are not known to the management of a medical aid society. The societies have also found it difficult to persuade their members to agree to frequent increases in subscriptions, because of the large proportion of members in the lower income group who find such increases an economic hardship.

In order to do away with the dissatisfaction which has been expressed in connection with the system it is suggested that the time has arrived to abolish the Tariff of Fees. The following reasons for this opinion are given, although the list is by no means complete:

1. The suggested fresh amendments to fees which follow hard on the heels of a complete revision of the Tariff.
2. The increasing doubts regarding the possibility of controlling the income groups of medical aid societies and the application of ceilings, e.g. the idea of bringing into account private incomes of members and the combined incomes of families, which cannot be ascertained.
3. The undignified procedure of bargaining with medical aid societies over fees. If required, the Association should lay down reasonable fees without having to argue about them with another party.
4. The dissatisfaction of specialist Groups when comparing their fees (which they had themselves submitted) with those of other specialist Groups. Maximum charges for illnesses are in dispute and needless jealousy between Groups is engendered.
5. The temptation to which many practitioners succumb of overvisiting or charging for multiple procedures in the course of one operation because a patient belongs to a medical aid society. Membership of a society is often taken as sufficient cause to render an account larger than would have been rendered to a patient from the same income category.
6. Regarding the increase in the number of societies as a danger rather than as an insurance that more and more people who would otherwise not be able to pay the doctor can do so and on a reasonable tariff.
7. The more recently expressed fear that, if the Association were to grant the preferential tariff to groups administered by insurance companies conducting medical aid insurance, the companies would reach a position of being able to dictate fees to the profession.
8. Relief from the necessity of the Medical Association having to scrutinize complaints from medical aid societies in connection with overvisiting and other irregularities.
9. Relief from the necessity of the Medical Association having to approach dilatory medical aid societies about the non-payment of accounts. A possible solution to the complaints that medical aid societies pay only 'in so far as their rules and regulations allow'.
10. The erroneous coupling of the Tariff with fees for private practice. Many practitioners charge the Tariff rates, which are evidently to their satisfaction, so that its 'preferential' nature falls away.
11. The possibility of the fees in the Tariff being 'pegged' by any Government measure in the future will be removed.

The abolition of the Tariff will thus mean that all patients will be private patients, subject to the individual fees which practitioners consider reasonable to charge according to their patients' financial standing. The fact that persons may insure themselves against the cost of sickness should be no concern of the doctor. To this end doctors should not be required to fill in special forms but only to give detailed accounts. Benefits from insurance policies or from medical aid societies should be paid to the insured persons by cheque which they should not be able to hand over to the doctor. Consequently, unless so informed by the patients, doctors will not know if patients are insured or not. 'Private practice', in its essence, will thus be assured.

Should the profession find that a return to the present system is desirable, the difficulties and doubts which have been encountered can be produced in argument against it; otherwise some new system will have to be developed which will be satisfactory to all concerned.

Observer

12 September 1960

[Readers are invited to submit their views on this important subject to the Editor, *South African Medical Journal*, P.O. Box 643 Cape Town, for publication in the Correspondence Columns of the *Journal*.—Editor.]